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> Coffee in Recovery: Lessons in policymaking and collaboration from Puerto Rico's coffee sector post-Hurricane Maria

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Coffee in Recovery: Lessons in

policymaking and collaboration from Puerto Rico's coffee sector post-Hurricane Maria

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Author Note: This article is based on a research study conducted for a Master's thesis (<https://atrium.lib.uoguelph.ca/xmlui/handle/10214/26469>) in Latin American and Caribbean Studies. Most data regarding the response of public and private actors was collected from sources January 2017 to September 2020, but has been updated to reflect current circumstances.

In September 2017, Hurricane Maria devastated the island of Puerto Rico, destroying critical infrastructure and agricultural industries, and causing the death of almost 3,000 people. Various studies and reports find damage to coffee plants varying amongst farms, ranging from 20 to greater than 80 percent of plants damaged or destroyed, with most news articles stating greater than 85 percent in some areas. The island as a whole, and notably the coffee sector, received an overwhelming response from national and international stakeholders in the agri-food industry. Puerto Rico's post-disaster landscape became a space for change and transformation of power while pre-existing vulnerabilities of coffee farmers were exacerbated.

“The slow progress towards replanting and recovery leads us to ask questions about the effectiveness of policy for coffee farmers during this transitional period, and the significance of international rural development projects in Puerto Rico's agri-food systems.”

Almost five years later, the coffee sector is just beginning to recover after years of political and social tension from poor policymaking and international efforts. The slow progress towards replanting and recovery leads us to ask questions about the effectiveness of policy for coffee farmers during this transitional period, and the significance of international rural development projects in Puerto Rico's agri-food systems. What factors caused such delays in recovery? What can be learned about policy and

collaboration for the next time climatic events disrupt local agri-food systems?

These questions are critical to the future of the island's coffee industry as several studies find that climate-related events such as hurricanes and extreme hydrometeorological events leave coffee producers extremely vulnerable and play a serious role in coffee crises and industry vulnerability. Studies indicate that Puerto Rico is one of the world's most vulnerable areas to climate change impacts, especially hurricanes and landslides (<https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2019GL082077>). Additionally, vulnerability to financial shocks in the coffee industry has been exacerbated by the COVID-19 pandemic and global market shifts. To address these issues in the Puerto Rican context and the failures of the past five years, it is imperative to understand the impacts of policy and relationships between actors in the island's coffee industry.

Agricultural Insurance and Challenges in Policymaking

One of the first major issues arising after Maria was the payment of insurance and incentives for farmers impacted by the hurricane. The response of the Puerto Rican government and United States government was excessively bureaucratic, resulting in delays in payments and receiving loans and impacting farmers adaptive capacities. Hundreds of claims were filed with the Corporación de Seguros Agrícolas (CSA) of the Puerto Rico Department of Agriculture, within the first few weeks after the hurricane. Many news reports found that farmers had difficulties securing agricultural loans from private banks, and that cheques were delayed. To compound this, at the time approximately only one third (https://www.elvocero.com/economia/da-os-a-la-agricultura-superan-los-2-mil-millones/article_e8b2386a-a948-11e7-b818-33f440cd40ab.html) of agricultural producers had insurance against extreme hydrometeorological threats and climate phenomena.

In November 2017, Joint Resolution 175 was proposed, asking the Department of Agriculture to issue annual payments of \$300 per quintal (https://www.wapa.tv/noticias/locales/presentan-medida-para-ayudar-a-caficultores-_20131122417995.html) of coffee for the next four years to farmers who had lost their harvests, to be used for fertilizers, labor, and administration expenses. The Secretary of Agriculture at the time, Carlos Flores Ortega, opposed the resolution due to a lack of financing. The issue reached legislation again at the start of 2018, with Senate Bill 574 drafted to develop la Oficina de Café de Puerto Rico, to address issues of centralization and consolidate coffee services. The Rosselló government supported to officially create the office, despite Governor Ricardo Rosselló being charged for his attempts to defraud the federal government by misusing aid funding contracts. Additionally, Senate Joint Resolution 153 was drafted asking the United States Customs and Border Protection office to pay money owed since 2014 to the Puerto Rican government for taxes on coffee importation. Later, in 2019 (https://www.elvocero.com/economia/agricultores-exigen-investigaci-n-sobre-fondos/article_f5800838-d029-11e9-9abe-17cb3038fd43.html), the Puerto Rico Farmers Association requested an investigation of agricultural funds for incentives granted in the past four years and the Department of Agriculture's impositions and restrictions. Notably, the investigation would consider the law creating la Oficina de Café and its apparent lack of operations and support to farmers.

“Institutions and institutional support were one of the most prevalent obstacles to farmers during the recovery process, and that farmers had difficulties with institutional obstacles for receiving agricultural subsidies.”

The bureaucratic response of the Puerto Rico Department of Agriculture and USDA to the agri-food systems crisis in Puerto Rico has undoubtedly hampered local recovery and increased vulnerability of farmers. A 2021 study by Rodriguez-Cruz et al (<https://www.frontiersin.org/articles/10.3389/fsufs.2021.662918/full>). confirms this sentiment, and finds that institutions and institutional support were one of the most prevalent obstacles to farmers during the recovery process, and that farmers had difficulties with institutional obstacles for receiving agricultural subsidies. To enhance farmer's adaptive capacities to future climate shocks, more attention must be paid to institutional and systemic levels. Policies for subsidies and agricultural insurance must reflect coffee grower's needs and their issues faced, or they do nothing to support farmers.

Institutional capacity and willingness to assist in recovery must also be addressed. There is a need for greater accountability and support by the Puerto Rico Department of Agriculture and United States Department of Agriculture. However, institutional capacity at the island level must be enhanced to be equipped to manage future disasters and climate shocks.

Replanting After Hurricane Maria and International Collaboration Efforts

After the hurricane hit the island and decimated coffee growing areas, there was a general consensus to replant the cultivation areas with new coffee seedlings. It is estimated that Hurricane Maria destroyed approximately 18 million coffee plants (https://www.elvocero.com/economia/destacan-gestiones-de-ayuda-a-caficultores/article_5f896e02-710e-11e9-bee4-53307796e7c9.html), with at least six million trees needed in the next three years. The lack of a solid state presence in Puerto Rico's coffee sector, coupled with a desperate need for more coffee trees, prompted a great deal of international attention and funding, and the potential introduction of new coffee varieties to the island.

Major coffee industry players such as Nespresso, the Starbucks Foundation, and Puerto Rico Coffee Roasters, in partnership with organizations including World Coffee Research, TechnoServe, the Rockefeller Foundation, and the Hispanic Federation proposed multiple replanting projects. The Puerto Rico Department of Agriculture and other Puerto Rican governing bodies also joined the efforts to replant and restore the coffee industry. However, revitalization efforts were fractured with so many different actors and agendas involved in recovery. A complex network of actors with differing agendas and power in Puerto Rico's post-hurricane coffee industry had emerged while coffee growers were left waiting for insurance payments and government support. Most notably, planting new coffee varieties became a source of contention between the Starbucks Foundation and its affiliates, Puerto Rico Coffee Roasters, the United States Department of Agriculture, and the Puerto Rico Department of Agriculture.

The Puerto Rico Department of Agriculture supported the donation of two million seeds of the Frontón and Limaní varieties, and incentives for compost, fungicides and machinery. These two varieties are some of the most common cultivars (<https://www.mdpi.com/2073-4395/10/2/228/htm>) planted in Puerto Rico, along with Catuaí, Borbón and Caturra. The Limaní and Frontón varieties are both contemporary dwarf cultivars, exemplifying modern agricultural intensification ideals and utilized locally for sun coffee farming. The Frontón varietal, a Catimor variety (<https://varieties.worldcoffeeresearch.org/varieties/fronton>) and cross between Timor Hybrid and Caturra, was introduced to Puerto Rico from Brazil's Instituto Agronomico de Campinas. The varietal was selected by the Estación Experimental Agrícola in Adjuntas for early production and high yields, as well as rust resistance. The Limaní cultivar is a Sarchimor, a Timor Hybrid and Villa Sarchi cross, developed in Puerto Rico at the Estación Experimental Agrícola. The Limaní was developed with the intention of rust resistance, and to be grown at altitudes of 1,000m or higher (<https://varieties.worldcoffeeresearch.org/varieties/limani>). The decision to promote the cultivation of these two varieties by the Puerto Rico Department of Agriculture reflects previous policies, subsidies, and incentives to support sun coffee farming, high-density planting and yield maximization. Additionally, in a space of power reorganization, selection of these cultivars indicates what the Department of Agriculture would like future cultivation and land-use practices to look like on the island, while securing power in the future of Puerto Rico's coffee landscape.

News reports indicate that the coffee seedlings had begun germination in December 2018, with nursery infrastructure already in place from previous government projects. The nurseries were initially used in

2016 to contract farmers to grow these varieties for their coffee rust-resistant properties.

Significant issues in collaboration for replanting, delays in dissemination of seedlings, and varietal selection between public and private sectors began to arise in May of 2018 when Puerto Rico Coffee Roasters partnered with World Coffee Research to invest in nurseries and introduce new arabica varieties from World Coffee Research. Monetary and seedling donations followed from the Hispanic Federation, Rockefeller Foundation, the Fonadellas Foundation, TechnoServe, Nespresso and the Starbucks Foundation. The Hispanic Federation provided funding for and subsidized the cost of over two million coffee seedlings of the Limaní, Frontón, and Obatá PR varieties in the Revive el Cafetal Puertorriqueño program. Additional funding from the Hispanic Federation, Nespresso and Rockefeller Foundations was also contributed.

The Starbucks Foundation contributed \$470,000 and two million Marsellesa (<https://stories.starbucks.com/stories/2018/starbucks-donates-2-million-coffee-seeds-to-rebuild-puerto-rico/>) variety coffee seedlings, with World Coffee Research conducting genetic testing. The Marsellesa cultivar was developed as a Sarchimor variety in Nicaragua by ECOM-CIRAD for its coffee leaf rust resistant traits. Similar replanting initiatives have been conducted around the world, notably by the Starbucks Foundation One Tree for Every Bag initiative during the coffee rust epidemic distributing ten million trees in El Salvador, Guatemala and Mexico.

The introduction of the Marsellesa coffee seedlings by the Starbucks Foundation and World Coffee Research quickly became a source of frustration for coffee growers and associations. A dire need for coffee trees was met with an overwhelmingly bureaucratic process of importing, quarantining, and planting the Marsellesa variety. There is a lack of data on how the selection process took place and the degree to which local actors were involved.

The Marsellesa seedlings, originally planned to stay in quarantine for a period of forty days (https://www.elvocero.com/economia/llegan-semillas-de-cafe/article_6973ac78-c0fd-11e8-a8ad-cb60959488a8.html) in September 2018, would stay in observation for six months (<https://www.elnuevodia.com/negocios/empresas-comercios/notas/starbucks-dona-semillas-para-recuperar-la-siembra-de-cafe/>) to comply with the USDA regulations. Meanwhile, the Limaní and Frontón varieties promoted by the government would be available for planting, reflective of previous government policies and agricultural incentives (<https://conbio.onlinelibrary.wiley.com/doi/10.1111/csp2.172>) supporting sun farming of 'dwarf' coffee varieties. The first Marsellesa seedlings were not planted until September 2019 in Adjuntas. Records indicate that 1,214,679 (https://www.elvocero.com/agricultura-entregar-m-s-de-medio-mill-n-de-arbolitos-de-cafe/article_392d8784-777f-11ea-98ae-2fee2785eba5.html) coffee trees of the Limaní, Frontón and Marsellesa varieties were distributed by the Puerto Rico Department of Agriculture for the *Programa de Recuperación del Cafetal* as of January 2020, but the data does not share the percentage of each variety distributed.

As of 2020, there is no indication in the data on why the Marsellesa seedlings were not planted, or why

so few of the Limaní and Frontón varieties were distributed. However, in 2020 a permanent injunction was granted preventing the Puerto Rico Department of Agriculture from interfering with the importing of coffee seeds from foreign countries with [USDA permits](https://www.theweeklyjournal.com/business/coffee-farmers-celebrate-judicial-order/article_fd38be30-528d-11ea-8460-fb14882ab86b.html) (https://www.theweeklyjournal.com/business/coffee-farmers-celebrate-judicial-order/article_fd38be30-528d-11ea-8460-fb14882ab86b.html). This injunction came after the failed importing of seeds after hurricane Maria, and subsequent fines for importing and detaining of coffee seeds that the Puerto Rico Department of Agriculture imposed on [Puerto Rico Coffee Roasters and Siembra Finca Carmen](https://www.govinfo.gov/content/pkg/USCOURTS-prd-3_18-cv-01783/pdf/USCOURTS-prd-3_18-cv-01783-0.pdf) (https://www.govinfo.gov/content/pkg/USCOURTS-prd-3_18-cv-01783/pdf/USCOURTS-prd-3_18-cv-01783-0.pdf).

All three coffee varieties in question are modern, high-yielding, 'dwarf' coffees. Despite their similarities in genetics and cultivation styles, the Marsellesa remains a foreign, imported variety that has not been developed or previously grown on the island. Thus, the delay in planting the Marsellesa variety is centered on questions of competing visions for the future of Puerto Rico's coffee industry and disconnects between public and private stakeholders. The actions of stakeholders are frequently at odds with each other notwithstanding a shared goal of replanting. While multinational corporations attempted to secure footing in Puerto Rico's recovering coffee industry by introducing imported varieties and assisting coffee farmers, the Puerto Rico Department of Agriculture endeavored to maintain control over coffee supply and production and keep coffee cultivars local. The Puerto Rico Department of Agriculture intervened in the initiatives to plant foreign coffee trees after hurricane Maria, as exemplified by the two million seeds donated by Starbucks not being planted for months. The lack of Marsellesa coffee seedling distribution and replanting by the Puerto Rico Department of Agriculture indicates growing tensions and power struggles between the department, the USDA, and private and non-government actors.

The Puerto Rico Department of Agriculture struggles to receive support from the federal government, as evident by the lack of payment by the United States Customs and Border Protection Office for coffee importation taxes, strict USDA policies prohibit the entry of unroasted green coffee to Hawaii and Puerto Rico (for pest and rust avoidance) without special permits issued by the secretary and the Animal and Plant Health Inspection Service, and the lack of support for Puerto Rico's coffee industry in the Coronavirus Food Assistance Program. Nonetheless, as of 2020, federal support was expressed to Puerto Rican coffee farmers through the *Siembra Finca Carmen vs. Secretary of the Department of Agriculture of Puerto Rico et al.* case, requiring the Puerto Rico Department of Agriculture to stop their permit interference. However, this support comes late to assist with the recovery of the coffee industry.

After Maria, the island government also struggled with corruption and the rebuilding of critical infrastructure. However, Puerto Rico's agricultural policies and institutions are not powerless or without capacity for change. The Secretary of Agriculture at the time, Carlos Flores Ortega was placed under investigation by la *Asociación de Agricultores de Puerto Rico* for allegations of misconduct (https://www.elvocero.com/actualidad/asociacion-de-agricultores-respalda-referido-a-justicia/article_c340277e-e841-11e9-8ee3-47df19378109.html) related to a delay in receiving funding for both the dairy and coffee sectors, as well as the two million coffee seeds.

Furthermore, leading private actors and organizations involved in replanting, specifically Puerto Rico Coffee Roasters and the Hispanic Federation, operate from a problematic position in the coffee industry. Puerto Rico Coffee Roasters, a Coca Cola subsidiary, currently holds a monopoly on Puerto Rican coffee brands and a major say in the control of production. The Hispanic Federation founder, Luis A. Miranda Jr., is both revered and disliked locally for his support of PROMESA, the Puerto Rico Oversight, Management, and Economic Stability Act, which aimed to oversee post-hurricane debt restructuring. The Hispanic Federation has previously been criticized over its close relationships with Coca Cola.

“Moving forward, it is imperative that further research must be conducted at local levels [...]. More attention must be paid to the actions of policymakers, and their complex relationships with private industry”

Moving forward, it is imperative that further research must be conducted at local levels to understand the impacts of these replanting endeavors, and for a greater understanding of coffee grower capacities and climate-adaptation options. It is possible that Procafé, the association of coffee producers in Puerto Rico and a part of la *Asociación de Agricultores de Puerto Rico*, may assist in this research. Procafé's capacities may be expanded to serve as a type of institution for growers, where the government's *Oficina de Café* is lacking.

More attention must be paid to the actions of policymakers, and their complex relationships with private industry. Private actors may have the capital to enhance coffee nursery capacities and secure resources for coffee growers. However, without industry cohesion and supportive policies, coffee growers will have less adaptive capacity to climate shocks and extreme events like Hurricane Maria.

Looking Forward: Coffee Harvests After Hurricane Maria

As of 2021, most coffee in Puerto Rico is primarily imported from other countries. Approximately 2,000 coffee farms (<https://dailycoffeenews.com/2021/07/29/specialty-coffee-farmers-brew-a-slow-drip-revival/>) exist on the island, contrary to the 5,000 farms before the hurricane. However, the current

secretary of agriculture, Ramon Gonzales, has highlighted an increase in coffee production, and the introduction of \$2.4 million in incentives (<https://newsismybusiness.com/agriculture-dept-assigns-2-4m-to-incentivize-puerto-rican-coffee-industry/>) to farmers through vouchers for new crops and fertilizers, and replanting. Recent reports indicate that a major issue for coffee farmers presently is a labor shortage to harvest coffee crops. Additionally, the cost of coffee production and processing is high due to high costs for electricity and unreliable services (<https://www.nbcnews.com/news/latino/puerto-rico-coffee-growers-bring-hope-hurricane-maria-rcna2406>). It is unclear whether current agricultural policies address these issues effectively.

Although the island's coffee sector is just beginning to recover, it is clear that public and private sectors must operate cohesively in the future to address coffee grower, industry, and institutional adaptive capacities. The development of these policies and relationships are critical for the future sustainability of Puerto Rico's coffee sector in the face of climate change.



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