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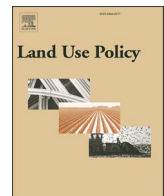


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Regulating belonging: Contradictions in Puerto Rico's agricultural land-use policies

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ABSTRACT

Zoning regulates which land uses *belong* on land. Also, zoning ordinances signal the local government's intent for land use regulation and its consequent exclusion of land uses, activities, and people. Exclusionary zoning has been well studied in urban settings, but less is known about its impact on farmlands. The archipelago of Puerto Rico serves as an important case to examine recent land-use policy changes and the government's intent on agricultural lands. This paper examines the 2010, 2015, 2019, 2020, and 2022 Joint Permit Regulations to ask: What rhetorical work do these five regulations employ for agricultural land? What insights do each of the Joint Permit Regulation offer about the government's intent for agricultural land? How do these regulations shape Puerto Rico's agricultural landscape and whose interest do they serve? To answer these questions, I employ two policy analytical methods, policy archeology and genealogy, along with five key subject-matter experts' interviews to assess how municipal-level zoning policies articulate territorialized politics of belonging on agricultural land zoned as productive agriculture (*agrícola productivo*, in Spanish). Theoretical thematic analysis from interviews with subject-matter experts shows how the official planning discourse in Puerto Rico uses the cover of disaster recovery and sustainable development to foster land dispossession and exclusion of farmers on Puerto Rico's most valuable agricultural land.

1. Introduction

Governments use zoning normatively for an expected outcome over land. In this process, governments use zoning ordinances to separate land uses by purpose, priority, and function (Stupen, 2017), and to "signal" to gatekeepers (such as city planners and permit officials), developers, and the general audience, which land uses are permitted and which are excluded (Hopkins and Knaap, 2018). Utilizing zoning ordinances, governments prescribe "how land in a particular segment of space may be used [or what use is appropriate], who should be present, and how it should appear" (Trudeau, 2006, p. 422, emphasis added).

Zoning scholars have posited that "all zoning is in some sense exclusionary in that it provides exclusive land-use districts," asserting its "exclusion is a matter of degree" (Schmidt and Paulsen, 2009, p. 97). When governments craft zoning districts they draw boundaries to control what is included or excluded on land. The control of these boundaries can range from highly restrictive to permissive, whereas the intent of zoning districts can range from overt to covert exclusion of land uses, activities, and people. While existing literature predominantly examines

exclusionary zoning in urban settings, particularly focusing on low-density-only zoning and its ramifications on housing (Lehmann, 2003; Pendall, 2000; Pendall et al., 2022; Pendall et al., 2018; Rothwell, 2011), this paper seeks to contribute to the literature by critically analyzing the rhetoric of zoning ordinances and study their exclusionary impact on farmland designated for productive agriculture.

The study of exclusionary zoning for productive agricultural zoning districts can be challenging due to the varied range of land uses associated with contemporary farmlands. Rather than a categorically exclusionary zoning district, land zoned as productive agriculture may accommodate various levels of residential, commercial, and industrial activities, alongside conservation efforts (such as watershed and soil restoration, agroforestry, etc.), energy production initiatives (such as solar and wind energy and biodigesters), and tourism (such as agrotourism). The degree of exclusionary zoning of agricultural land can vary greatly across jurisdictions. It will depend on the territorialized politics of belonging of each context or the "discourses and practices that establish and maintain discursive and material boundaries corresponding to the imagined geographies of a polity and to the spaces that

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normatively embody the polity” (Trudeau, 2006, p. 421, emphasis added). Observing the rhetoric used in policy documents is one means to determine the intended degree of exclusion of farmlands.

This study examines the context of Puerto Rico by focusing on the five versions of a land development code called the Joint Permit Regulation (2010, 2015, 2019, 2020, and 2022). Disguised as a zoning code, the Joint Permit Regulation was formulated by the Puerto Rico Planning Board (PRPB) and has attracted the attention from both the public and the judiciary. Analyzing the rhetoric of each Joint Permit Regulation (JR) helps in providing insight into the government’s intent and the potential exclusionary impact of this policy, without delving into its judicial disputes or its implementation (see Part 4).

Within the five JRs there is only one zoning district applicable to the most valuable agricultural land in Puerto Rico: “*agrícola productivo*” (A-P) or productive agriculture. Land zoned as A-P is distributed across all of Puerto Rico’s archipelago (see Fig. 1). The A-P zoning district is intended for farmlands with the best land capability class for food production (I-IV), according to the Natural Resources Conservation Service classification of the United States Department of Agriculture. Knowing how the JRs address A-P zoned land is important, because fertile land has historically been affected by urban sprawl (López et al., 2001) and policies that undermine agriculture (Carro-Figueroa, 2002). Productive agricultural land is a critically limited resource in Puerto Rico, and it is essential to increase local food production.

This article asks three key questions: What rhetorical work do these five regulations employ for agricultural land? What insights do each of the Joint Permit Regulation offer about the government’s intent for agricultural land? How do these regulations shape Puerto Rico’s agricultural landscape and whose interest do they serve? The paper proceeds as follows: first, I provide a brief introduction to the role of land use policies in protecting farmland and determining who belongs or is excluded from land. Second, I offer an overview of Puerto Rico’s land-food-energy policy nexus impacting land use. Third, I summarize the policies that have culminated in the controversial 2010, 2015, 2019, 2020, and 2022 JRs. Fourth, I delve into the methodologies employed for policy analysis (policy archeology and genealogy) to evaluate the rhetoric of these five policy documents along subject matter experts (SME) who helped interpret the meaning behind the text. Finally, I delineate the findings, offer a discussion, and share my conclusions.

2. Forms of belonging and protecting farmland

People belong to territories and land in several ways. Formal and informal criteria typically exist for belonging on/to land (Brubaker, 2010; Crowley, 1999; Mee and Wright, 2009). Informal criteria of belonging are the claims and sense of personal connection to land that people achieve through cultural tradition, membership to a group, and other forms of social dynamics (Crowley, 1999). Conversely, formal criteria of belonging are mainly mediated by nation-states through state citizenship (Yuval-Davis, 2016) and territorial borders, which internally regulate who belongs, is permitted, and is considered “proper” via designated gatekeepers (Brubaker, 2010; Crowley, 1999). Similarly, states articulate the bounds of space and landscapes through zoning tools (Trudeau, 2006) implemented by the state’s inherent police powers (Bettman, 1923). Within the US, the state’s police power grants municipal governments the authority to regulate the use of property (and land) to prevent harm to public health, safety, morals, and promote general welfare (see *Keystone Bituminous Coal Ass’n v. DeBenedictis*, 480 U.S. 470, 500–07 (1987); *Vill. of Euclid, Ohio v. Ambler Realty Co.*, 272 U.S. 365, 387 (1926)). Particularly of interest to this paper are the formal criteria of belonging used by the state to define proper land use via zoning ordinances in productive agricultural land.

Zoning regulates belonging and exclusion by the discursive and material boundaries that identify *prima facie* what (and who) is welcomed in a specific zoning district. Land uses included in zoning districts will not only dictate how the landscape would look like, but also

who would be included, excluded, or even expelled from the district (Rabin, 1989). Historically, these seemingly unbiased technical tools have been used to create boundaries of exclusion resulting in racist and classist discrimination. Two well-known examples of exclusionary zoning policies in the US are the explicit racial zoning, practiced in various cities in the southern region of US (Rothstein, 2018), and the over-zoning for single-family-only houses (also known as R1) causing economically and racist discriminatory access to housing (Manville et al., 2020; Pendall, 2021). Any zoning district may result exclusionary and adversely impact the value of that which zoning is ostensibly intending to protect, depending on the permitted land uses in the district, the location of the district, how frequent the district is used, and the relationship of that zoning policy to other existing public practices.

Particularly relevant to this paper is the control (restrictive or permissive) of uses allowed in zoning districts. Restrictive zoning ordinances typically aim to limit incompatible land uses within specific districts (Lynch and Duke, 2003). For example, excluding industrial activities from zones designated for environmental conservation. Critiques of restrictive zoning often highlights its role in perpetuating discriminatory practices, particularly when advocating for single-family-only houses in residential zones for racist and classist discrimination (Pendall, 2000). Conversely, permissive zoning ordinances may allow for varying degrees of incompatible land uses, such as permitting industrial activities within conservation zoning districts. Permissive zoning can lead to several potential consequences, including the approval of incompatible land uses, increased land values and associated tax rates and the issuance of ministerial land-use permits.¹ The degree of zoning control varies across jurisdictions, ranging from restrictive to permissive, reflecting the government’s intent for their land.

While varying by jurisdictions, the protection of valuable farmland is critical because “productive agricultural land is an irreplaceable natural resource” (Paster, 2004, p. 283). Productive agricultural land is characterized for its optimal soil fertility, moderate slopes, adequate plant-available nutrients, protective barriers against flood and erosion risks, reliable access to irrigation water, and a history of compatible land uses, among others (Freyer et al., 2023; Gould et al., 2017). Some jurisdictions preserve agricultural land by restricting urban expansion, prohibiting development in fertile soils, and limiting non-farming activity on agricultural land (Paster, 2004). Similarly, farmlands are preserved by policies that foster sustainable farming practices as these reduce the risk of both soil exhaustion and watershed contaminations, and safeguard access to fertile soils for future generations (Lal, 2015; Smith and McDonald, 1998). Local governments have the authority to utilize their police power to control or redirect nonagricultural demand on farmland, while promoting local and sustainable food production using state-subsidized credits, extension, and tariffs, among others (Leshner and Eiler, 1978). Indeed, the state can act both in limiting and constructively promoting land uses (Bettman, 1923). As expressed in *Bacon v. Walker*, 204 U.S. 318 (1907), “power is not confined to the suppression of what is offensive, disorderly, or unsanitary. It extends to so dealing with the conditions which exist in the state as to bring out of them the greatest welfare of its people.”

Without regulatory land-use controls and protections of valuable farmland, food production, as well as farmers’ livelihoods and their localized practice and knowledge could be threatened. Ensuring that farmers belong on farmland, with land-use policies and programs, could safeguard their localized food production knowledge (Beckford and Barker, 2007) and the possibility of sharing this knowledge with future generations (Marrero et al., 2022). Ineffective zoning policies may affect how land is valued. Increased land costs could represent an increase in food production costs, resulting in higher prices for consumers and

¹ “Occurs when a determination must be made without the exercise of discretion or factual judgement” (Sullivan, 2002, p. 461).

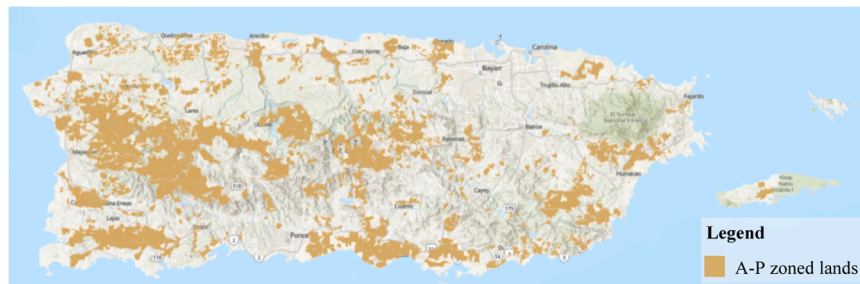


Fig. 1. Location of farmlands zoned as A-P as proposed in the 2019 JR for Puerto Rico (ArcGIS Pro).

reduced access for the food produced locally. Therefore, it is important for governments to prioritize productive agricultural land to promote the general welfare and health of all residents (Smith et al., 2016), as well as to ensure that productive farmlands remain accessible for farmers, both present and in the future.

3. Overview of Puerto Rico's land-food-energy policy nexus

Valuable farmlands in Puerto Rico face threats from competing demands for food, energy, and urban development, as well as historical and current economic pressures. These farmlands include “lands well-suited for mechanized and non-mechanized agriculture, such as row and specialty crops, livestock, dairy, hay, pasture, and fruits; and areas suitable for forestry production, such as timber and non-timber products, agroforestry, and shade coffee” (Gould et al., 2017, p.1). The archipelago has seen a concerning decline in farmlands and farms over the past century (Stokes-Ramos, 2023). In 1910, Puerto Rico's farmland comprised 94.8 % of its land (2085,162 acres) and included 58,371 farms, but in 2018 this number had fallen to 21.6 % (473,737 acres) of the archipelago and reduced to a total of 8230 farms (Department of Commerce, 1910; USDA National Agricultural Statistics Service, 2020).

In part, the loss of farmland was due to a process called “Operation Bootstrap” (Operation Hands to Work, from its Spanish translation), starting in 1947. This policy sought to shift the national economy from being purely agrarian to a model of “industrialization by invitation” in which US firms were invited to develop industries in Puerto Rico with vast federal and local tax exemptions (Guptill, 2008), making Puerto Rico highly dependent on US foreign investment (Serrano, 2017). Urban land progressively increased from “1.7 % of Puerto Rico in 1951–15.4 % in 2000,” while agricultural land use declined by 95 % during the same time period (Kennaway and Helmer, 2007, p. 365). At the time, the agricultural sector was “implicitly viewed as an obstacle for growth rather than a resource to be rescued” (Carro-Figueroa, 2002, p. 82), while urban development, however disorderly, was valued as a sign of modernity (Catalá-Oliveras, 2013). Consequently, families were uprooted from farmlands, disintegrating rural communities from the countryside (Carro-Figueroa, 2002), and contributing to a sense of disconnection from farmlands and, therefore, the country.

The lasting impact of industrialization in Puerto Rico is evident in farm workers' current average age of 60.6 years (USDA National Agricultural Statistics Service, 2020). This labor force reaching its retirement age is, according to the 2018 USDA Census of Agriculture, mostly male (88.5 %) and largely comprised of landowners (78 %), though only 50 % are working in agriculture as their primary occupation. Being mostly comprised of a population reaching its retirement age and still recovering from the impacts caused by Hurricane Irma and María in 2017 (Rodríguez-Cruz et al., 2022; Rodríguez-Cruz et al., 2021), it can be deduced that in the near future most of these farm workers could be seeking alternative sources of income. Including, using their farmlands for nonagricultural uses.

Food insecurity remains high in Puerto Rico (Ostolaza et al., 2023), exacerbated by structural inequalities (Ginzburg, 2022) and reliance on

food imports regulated by laws like the Jones Act. Importing more than 85 % of its foods, Puerto Ricans pay twice as much for foods as residents of the US (Denis, 2017). The Jones Act (also known as the Merchant Marine Act, signed on June 5, 1920), forces shipments between the US and Puerto Rico to adhere to the following conditions: the use of US flagged and licensed vessels built in the US, owned by US-based companies, with over 75 % of the ownership stake held by US citizens and crewed by at least 75 % US citizens. Any foreign registry vessel that enters Puerto Rico must pay punitive tariffs, fees, and taxes, making Puerto Rico a captive market for the US without foreign competition. As an example, a 20-ft container sent to Puerto Rico from the US costs \$3063, while the same shipment to Kingston, Jamaica, costs \$1687 (Federal Reserve Bank of New York, 2012). Pervasive poverty in Puerto Rico is “more than three times as high as that for the US as a whole” (Vargas-Ramos et al., 2023, p. 3) which has consequences on people's ability to access food.

Inequality is also prevalent in land ownership in Puerto Rico, which has historically evolved from land tenure laws that have particularly favored affluent families. Dating back to the “1500s with regulations that were valid in a colonial context of exploitation of enslaved people and agricultural laborers who had no access to control nor the eventual formalization of the right to land in the 1800s and 1900s,” land tenure laws have discriminated against generations of people in Puerto Rico (Fontáñez-Torres, 2020, p. 40) and thus, have shaped the composition of current farmland owners. To this day, a set of farmland owners in Puerto Rico belong to the top wealthy families that hold vast amounts of land while, for example, enjoying agricultural tax deductions as *bonafide* farmers. Landownership is relevant to this paper because whoever owns land also holds the authority to utilize policies such as zoning, and to apply for land use permits, to alter land use.

Inequality is expected to increase with the enforcement of austerity measures impacting vital services in Puerto Rico, including access to food. These measures are enforced by the Financial Oversight and Management Board (FOMB), established under the 2016 Puerto Rico Oversight, Management, and Economic Stability Act (PROMESA). The FOMB's goal is to repay bondholders amidst the archipelago's unaudited \$72 billion debt, which further compound the challenges faced by residents in Puerto Rico (Garriga-López, 2020; Onís and Lloréns, 2021). Scholars note that the FOMB's policies restrict access to “life-sustaining entitlements such as food, housing, education assistance, and disaster aid” (Villanueva, 2019, p. 189), while also reducing public services, benefits, and employment opportunities, and increasing taxes (Bannan, 2016). The FOMB has pursued further financial controls to extract value from Puerto Rico (Caban, 2018). Among other policies sponsored by the FOMB, is the approval of the Joint Permit Regulation.

Additionally, the FOMB has allocated public funding from Puerto Rico to the development of industrial-scale solar farms on agricultural land, raising concerns about land available for local food production. The 187 projects approved by the Puerto Rico Energy Bureau and the FOMB involve the production of 1800 megawatt in industrial solar energy projects that would occupy between 13,900 and 16,200 acres of coastal areas and agricultural reserves (Nick Grue et al., 2021), an

activity proven effective on rooftops of residential buildings in Puerto Rico (O'Neill-Carrillo et al., 2019; Pares-Aviles et al., 2020).

Moreover, Puerto Rico's designation of 98% of its land as an Opportunity Zone, pursuant to the Federal Act for Work and Tax Reduction (Tax Cuts and Jobs Act), raises concerns regarding land speculation and development on basically all farmlands. Enacted in 2019, this designation increases preferential tax treatment for capital gains from investments in specified census tracts. This "incentive zone," along with additional tax incentives established through Act 20/22 (now Act 60) since 2012, presents lucrative profit and speculative opportunities for the super-rich (García-López, 2022) instead of residents in targeted neighborhoods by the Opportunity Zone (Freedman et al., 2023).

In summary, Puerto Rico's land-food-energy policy nexus presents complex challenges influenced by historical, economic, and policy-related factors, affecting its agricultural sector, land use planning, and overall well-being. In this complex scenario, the five iterations of the Joint Permit Regulation have been crafted by the Puerto Rico Planning Board with the goal of regulating the types of land uses permitted across the entire archipelago of Puerto Rico.

4. What role do the joint permit regulations play within PR's land use policy landscape?

Puerto Rico's land use planning system is distinctive. It involves separate responsibilities for both national and municipal governments, a consolidation of responsibilities that are relatively new and ongoing. Decision making occurs at both municipal and national scales, governed by a historical legacy of colonialism and power struggles between centralized planning institutions and municipalities.

The Puerto Rico Planning Board (PRPB) was established in 1942 under the leadership of Rexford Tugwell, the last US-appointed American governor of Puerto Rico. Tugwell aimed to implement his *laissez-faire* vision for Puerto Rico by centralizing planning through one agency with island-wide jurisdiction: the PRPB (Hernandez-Marquez, 1986). Since its inception, the PRPB has been tasked with regulating all land use across the archipelago (Hernandez-Marquez, 1986), initially focusing on urban areas. The revised roles of the PRPB were determined in 1975 by Act 75 the "Organic Law of the Planning Board of Puerto Rico" which delegated its permitting responsibilities to the Administration of Regulations and Permits of the Commonwealth of Puerto Rico (now *Oficina de Gerencia y Permisos* or *OGPE*). The PRPB, appointed by the governor in turn, has since overseen land-use planning in all of Puerto Rico on a land area of 3,423 mi².

The municipal reform of 1991 was one of the biggest efforts to decentralize land use planning in Puerto Rico. Comparable to the Standard City Planning Enabling Act of 1928 in the US, in 1991 Puerto Rico enacted the Autonomous Municipality Act or Act 81 allowing municipalities in Puerto Rico to adopt "*Planes de Ordenación Territorial*" (best known as POT or Territorial Plans) and propose municipal-level zoning (*calificación*) after creating their POTs. Despite Act 81 (then repealed in August 2020 by Act 107 *Municipal Code of Puerto Rico*), many municipalities lacked the technical and financial capacity to create their POTs, leaving significant portions of Puerto Rico un-zoned. Presently, 71 out of 78 municipalities have approved POTs and 18 have a municipal permits office. In areas where municipal institutions are absent, the PRPB dictates municipal-level planning.

Despite decentralization efforts, land-use planning in Puerto Rico remains highly centralized, with the PRPB retaining authority to approve POTs, which are not considered final until signed by the governor.² The centralized decision-making process has led to a

² This step marks a huge difference from the planning processes of other jurisdictions in the US. For example, in cities in NY, the city Planning Board reviews each case, and the city council (not the governor) makes the final determination.

Table 1

Types of plans and its corresponding zoning type in Puerto Rico (in English and Spanish).

Type of Plan	Acronym (SPA)	Type of zoning (ENG)	Type of zoning (SPA)
Land Use Plan	PUT	National zoning	<i>Clasificación o Planos de Ordenación</i>
Territorial Plan	POT	Local or municipal zoning, or zoning district	<i>Calificación, Distrito de Ordenación o Zonificación</i>

bureaucratic and inefficient permitting system, influenced by changes in political administration (between the New Progressive Party and the Popular Democratic Party) and competing land-use priorities. The centralized nature of land use planning in Puerto Rico has had an impact on how the Joint Permit Regulations were created, as explained next.

In 2009, the Puerto Rico Permitting Process Reform Act was crafted to address the slow and deficient permitting process which was particularly affecting the construction industry. Particularly, to address the coordination of diverse municipal-level zoning districts (hundreds of districts created by the 78 municipalities since Act 81), which has been judged by some as an inefficient mechanism and has prompted calls for the homogenization of all zoning by the centralized government. The 2009 reform (signed by a New Progressive Party administration) mandated the creation of a Joint Permit Regulation (JR) to establish "uniform nomenclature for zoning districts" across all municipalities. The first JR for Construction Work and Use of Land was developed in 2010 by the PRPB, but compliance varied by municipalities. While the 2010 JR aimed to create generic land-use districts, municipalities still retained autonomy granted by Act 81, leading to discrepancies in zoning practices across municipalities. Indeed, the 2010 JR stated: "these regulations shall apply throughout the entire territorial extension of the Commonwealth of Puerto Rico (...) except for municipalities that have a Territorial Plan" (*Junta de Planificación de Puerto Rico, 2010*, p. 5).

The second version of the JR was created in 2015 under a new administration at the PRPB (from the Popular Democratic Party). Also in 2015, a new island-wide land-use plan (the "*Plan de Uso de Terrenos*" or PUT) and its corresponding map was adopted. Since 2015, and unlike other jurisdictions in the US,³ Puerto Rico manages both national-level zoning and municipal-level zoning (see [Table 1](#) for Spanish translations). The PUT proposed a significant amount of land solely for agriculture, a total of 637,592 acres of land. Following the passage of the PUT, all municipalities had up to two years to prepare territorial plans (POTs) and complementary maps aligned with the land-use categories in the PUT. While municipal zoning must conform to national regulations, difficulties persist in guaranteeing uniformity and adherence among municipalities to national-level zoning.

Like the 2010 JR, the 2015 JR also exempted municipalities that already had POTs, as stated in its scope: "This regulation shall apply throughout the entire territorial extension of the Commonwealth of Puerto Rico. It shall not apply to those municipalities that have an approved Territorial Plan and have not adopted this Regulation as their regulatory instrument" (*Junta de Planificación de Puerto Rico, 2015*, p. 6).

While the 2010 and 2015 JRs exempted municipalities with POTs, subsequent JRs in 2019, 2020, and 2022 have aimed to modify zoning districts for all municipalities including those municipalities with existing POTs. Both the 2019 and 2020 JR state, "This chapter establishes and defines the different typologies of zoning districts that will govern throughout the island (...) for the purpose of establishing

³ Hawaii's dual-land use classification has been compared to PR's zoning. The Land Use Commission of Hawaii classifies the land into four land-use districts: urban, rural, agricultural, and conservation, which are similar to PR's *clasificaciones*.

uniform uses and zoning districts for all of Puerto Rico” (*Junta de Planificación de Puerto Rico, 2019*, p. 260; *Junta de Planificación de Puerto Rico, 2020*, p. 308). The 2015, 2019 and 2020 JRs have faced legal challenges, with courts annulling them (the 2020 JR annulled twice) for various procedural violations. At the time of this publication, the 2022 JR was undergoing public scrutiny, while an Emergency JR was published by the PRPB for interim use. While many contend that the current valid version is the 2010 JR, this remains unclear. Despite the annulations, the PRPB has continued to use 2020 JR, leading to significant permits (more than 200,000⁴) granted illegally by the Permitting Office.

Similar to 2019 and 2020 JR, the 2022 JR explicitly mandates that “all municipalities that have an approved *Plan de Ordenamiento Territorial* (POT) or do not have such a plan will have to harmonize their districts to the nomenclature set forth in this Regulation” (*Junta de Planificación de Puerto Rico, 2022*, p. 374). Moreover, it states that:

All municipalities with the assistance of the Planning Board shall initiate a process of revision of the Geodata contained in their *Plan de Ordenamiento Territorial* (POT), with the purpose of harmonizing the Zoning Districts described in the previous section that are new to their plans (...). However, in those cases where the existing POT are similar to what is contemplated here, the application of this regulation will be immediate in everything that is not contrary to the objectives and public policies described in the current POT (p. 376–77)

As mentioned earlier, land use planning in Puerto Rico is characterized by complex and ongoing power struggles between centralized planning institutions and municipalities. Within this intricate landscape, planners at both municipal planning offices and the PRPB navigate through various policy tools, including the 2015 Land Use Plan (PUT), territorial plans (POTs), municipal-level zoning, national-level zoning, and other special plans at regional and neighborhood levels (like the Karst Zone and Agricultural Reserves Plans). Ongoing debates involve considerations about whether zoning should be uniform or tailored to the specific characteristics of each of the 78 municipalities, as well as discussions about centralized versus decentralized planning approaches. As each JR undergoes changes, are adopted (even temporarily) or annulled, there is a requirement set to municipalities to continuously adapt to new procedures and standards, which have undergone significant revisions over the past decade. This in turn has made regulatory implementation confusing, irregular, and full of exceptions.

In this obfuscated context, the various versions of the JR regulate land use on farmlands; using zoning districts such as productive agriculture (*Agrícola Productivo* or AP) and general agriculture (*Agrícola General* or AG). Apart from AP and AG, the JRs do not include any other alternative zoning options for municipalities to designate farmlands. This paper focuses exclusively on AP zoning districts because they are specifically tailored for the most productive farmlands, including agricultural reserves, with the highest land capability class for food production (I-IV) of the Natural Resources Conservation Service classification of the United States Department of Agriculture. In contrast, the AG district is designated for land with a capability class of V-VIII, which have certain limitations that restrict their suitability for productive agriculture. *Fig. 1* depicts the location of all land designated as A-P in the 2019 JR, which is the only version that included a map indicating the location of zoning districts. According to the JR-2019 map, A-P zoned land in Puerto Rico covers 488,515 acres, or 22 % of the territory.

⁴ <https://aldia.microjuris.com/2023/03/15/supremo-confirma-decision-del-tribunal-de-apelaciones-sobre-el-reglamento-que-expide-permisos-relacionados-al-desarrollo/>

5. Methods: excavations in the analysis of policy documents

The qualitative analysis employed in this paper draws from an examination of the 2010, 2015, 2019, 2020, and 2022 JRs. The rationale for selecting the JRs over other existing land-use policy instruments is based on the PRPB’s aim to make the JRs a comprehensive policy applicable to all municipalities. This paper examines the rhetoric within these documents rather than conducting a case-by-case analysis of the policy’s implementation and outcomes. Focusing on the rhetoric of the policy allows to study how the normative nature of the JRs could impact all future permit decisions in Puerto Rico.

The language utilized in the JRs leaves room for varied interpretations. To address potential discrepancies in reader’s interpretation, I conducted semi-structured interviews with key subject-matter experts (SMEs) from Puerto Rico, seeking deeper insights into the understanding of the text. The five SMEs encompassed municipal planning practitioners, architects, policymakers, and environmental lawyers, some of whom had prior experience as members of the PRPB. For instance, SME 1 served as president of the Puerto Rico Planning Association and worked as a municipal planner in San Juan, while SME 2 held the position of vice-president at the PRPB. SME 3 served as president of the PRPB, and SME 4 was a member of the Multisectoral Advisory Committee for the PRPB involved in examining the 2019 zoning map. Finally, SME 5 is an environmental lawyer with expertise in land policy in Puerto Rico. These participants were selected based on their active involvement in communicating and engaging with the JRs.

The data collected for this research includes the transcriptions from SME’s interviews and the sections in each of the JRs that pertain to the zoning district *Agrícola Productivo*, A-P or productive agriculture, found in the following 22 pages (see Appendix): 2010 JR (p. 424–26), 2015 JR (p. 409–11), 2019 JR (p. 357–61), 2020 JR (p. 435–39), and 2022 JR (p. 499–504). All JRs were obtained from the PRPB’s website (<https://jp.pr.gov/nuevo-reglamento-conjunto/>). Both the original JRs and the transcriptions of interviews are in Spanish. The sections and quotes included in this paper are translated from the original policy documents and transcriptions to English.

To extract the data from the JRs, I employed policy archeology and policy genealogy as explained by Gale (2001). Policy archeology suggests that the analysis of policy documents can be achieved through “excavations” that examine why certain aspects of the policy text are included or excluded. By combining the territorialized politics of belonging framework with policy archeology, the SMEs and I examined why some land uses are included and others excluded from the zoning district A-P. Moreover, I traced the policy genealogy (Gale, 2001) of the JRs over time to identify trends in policy rhetoric across the five JRs.

Data extraction was guided by the territorialized politics of belonging literature, which suggests that zoning ordinances prescribe “how land in a particular segment of space may be used [or what use is appropriate], who should be present, and how it should appear” (Trudeau, 2006, p. 422, emphasis added). Each SME reviewed the 22 pages of text corresponding to the zoning district A-P in each JR and responded to a series of questions. For the first excavation they answered “what” uses are included or excluded in each A-P zoning district across all five JRs. In the second excavation they examined “who” can belong on A-P zoned land, and in the third, “how” the landscape is transformed through the rhetoric of the text. Finally, the SMEs identified patterns and discontinuities across the five JRs.

SME’s online interviews were conducted separately to allow space for varied interpretations. These were completed between February and May of 2023 and averaged 70–80 minutes. Reviewing the relevant pages of the JR displayed on the shared screen, all subject matter experts (SMEs) were prompted to base their responses on their interpretation of the documents, their experiences informing and evaluating land-use policies, and considering the potential policy interpretation by designated gatekeepers in Puerto Rico.

The data (22 pages of JRs and transcriptions from five SME

interviews) was analyzed through a theoretical thematic analysis (as described in Braun and Clarke, 2006). The analytic process involved a “progression from *description*... to show patterns in semantic content, and summarized, to *interpretation*, ...in relation to previous literature” (Braun and Clarke, 2006, p. 84). Responses shared by SMEs were coded manually in three forms: what, who, and how (see next section), and themes were identified, organized, and analyzed at the semantic level or “not looking for anything beyond what a participant has said or what has been written” (Braun and Clarke, 2006, p. 84). All SMEs reviewed the final draft for information accuracy.

6. Regulating belonging on agricultural lands

The findings in this paper are divided into three sections: 1) what, 2) who, and 3) how. Each section represents an excavation as it digs deeper into the rhetoric employed in each JR, to answer what is included/excluded (policy archeology) and how it changed over time (policy genealogy). Themes identified for each excavation are detailed under each section.

6.1. First excavation: what belongs?

The zoning district A-P contains a list of diverse land uses permitted across the five JRs (see Fig. 2). The name (A-P) does not change across JRs. The list of permitted uses in the 2010 and 2015 JRs include agricultural (livestock, agro-industrial, packaging, processing, selling, and grain mills) and residential land uses (1-family dwelling). The 2010 JR also permits windmills on productive agricultural lands. Unlike 2010 and 2015 JRs, the 2019, 2020, and 2022 JRs include other nonagricultural land uses such as residential (1–2 family dwelling and second floor), commercial (cannabis, manufacturing, and agro-lodge), industrial (renewable energy projects), tourism (bed and breakfast, short-term supplementary accommodation, agrotourism, and ecotourism), and other uses via consultation. At the same time, the last three JRs (2019, 2020, and 2022) add additional agriculturally related uses such as fishing, ornamental plants, animal husbandry, medicinal, aromatic products, livestock poultry, domestic animal and game farming, apiaries, aquaculture, production of crops, fodder, forest, and agroecological crops.

None of the JRs define or describe the above-mentioned land uses. There are no glossaries nor appendixes defining, for example, “ecolodge” or “renewable energy.” Land uses are simply presented as an enumerated list (in the 2010 and 2015 JRs) or a table (in the 2019, 2020,

and 2022 JRs) that is divided into three main columns: “agriculture, residential, and others.” Yet, the permitted uses included in the JRs are more than these three categories.

In Fig. 2, I represent the total number of unique permitted land use in more accurate categories: agricultural, residential, commercial, industrial, tourism, and others via consultation. For example, in Fig. 2 I located “bed and breakfast” and “short-term supplementary accommodation” under tourism instead of residential, as included in the JRs (see appendix for the original JRs).

When compared genealogically, the number of permitted land uses (agricultural and non-agricultural) on the A-P zoning district increased from the 2010 JR to the 2022 JR, as illustrated in Fig. 2. Yet, the interviewees suggested that an increase in the potential number of agricultural and nonagricultural land uses on the same zoning district can increase competition among incompatible land uses on A-P zoned land. In other words, while more agricultural uses are increased in the JRs and could potentially be beneficial for land zoned as productive agriculture, these uses will now compete for land space and value with non-agricultural uses such as housing, tourism, and industrial and commercial activity. In this sense, SME 1 considered that “competing nonagricultural uses has negative consequences for agricultural lands, as it impacts, not only the value of the land, but the value of what farmers produce.” As more uses are potentially permitted on land, its value increases, resulting in increased land and food production costs for farmers.

The nomenclature (A-P) and the statement of purpose remain consistent across the five JRs. However, each version expands the range of nonagricultural land uses permitted in areas zoned as productive agriculture. Nonagricultural uses are especially incompatible with productive agriculture because the JRs lack parameters and specifications for permitted uses. For example, SME 1, a past member of the Multi-sectoral Advisory Committee for the PRPB for the examination of the 2019 zoning map, commented, “all kinds of agriculture activity are permitted, and you must imagine the extremes, because there are no definitions, nor criteria.” The JRs includes multiple types of agricultural uses, ranging from industrial and extractive agriculture to small-scale sustainable or agroecological farming, but all are equally allowed in A-P zoning district. The same occurs with other nonagricultural uses. SME 2 suggests that since the 2010 JR, there are no description for residency “associated with agricultural activity.” Without this information, the SMEs consider that the JRs allow for any type of residential activity (a problem discussed further in the following section). SME 4 also pointed out that “it is not clear what the difference is between agro-

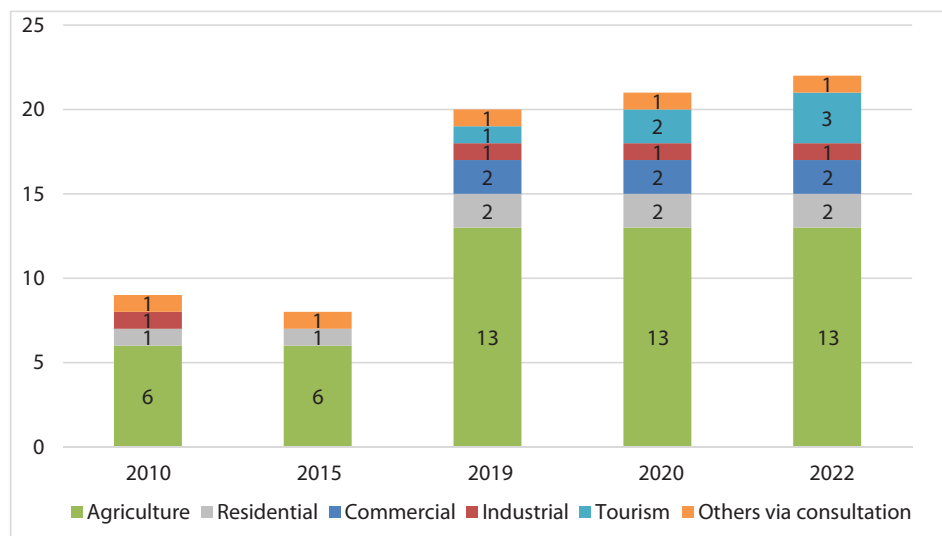


Fig. 2. Number of land uses permitted in A-P districts per each JR as described by six categories.

lodge, agrotourism, and AirBnBs, although I could suppose there is an expectation that food could be offered in some cases, but it's not clear." SME 4 adds, "it is also not clear what percentage of the land can be occupied by renewable energy projects, cannabis farming, nor AirBnB on land zoned as A-P." The language in the JRs is equally permissible of any extent of land to be occupied for nonagricultural uses because there are no definitions of a maximum capacity for each use.

Even without clear definitions and parameters, the JRs are expected to be used by municipal planning and permit officers before signing land use permits. Dissenting interpretations by SMEs exposed what could potentially occur when planning and permit officers interpret the JRs. This happened for the column called "others." Some SMEs suggested that the land uses listed under this column represent an automatic ministerial (non-discretionary) permit, while others suggested it should be interpreted as requiring more discretion before a permit approval. Independently of the varied opinions for this column, SMEs considered that all land uses included on the table of the A-P zoning district are expected to be approved as ministerial permits. As SME 4 explained further, "the land uses we are seeing on these tables are expected to be approved without mayor inconvenience for the developer and by the permit evaluator."

The SMEs used the language of "misleading intentions" to refer to how the JRs make incompatible land uses seem compatible with productive agriculture and the most fertile soils in Puerto Rico. SMEs suggested that the inclusion of renewable energy projects without specifying their scale and scope can be misinterpreted in the permitting process. While renewable energy land uses could give the impression of a sustainable and compatible use occupying a portion of the farm, when there are no parameters for maximum capacity, this use could end up occupying all the area of the farmland. In essence, all or some portion of the land zoned as A-P could be transformed into nonagricultural uses. SME 1 shared, "in the JRs, they do not adhere to any definition of what a renewable energy project is, to help proponents or designated gatekeepers define compliance." The renewable energy sector is "being favored because they could buy land much more cheaply on productive agricultural land" posited SME 1. SME 1 added,

For example, they are trying to push Bed and Breakfast and short-term rental as a residential use when they are not. Even more, they are treating all these (nonfarming) uses as 'compatible' with agriculture, while disregarding the implications it has as a commercial land use...such as receiving visitors, the need for investment in new infrastructure, like roads and illumination, the development pressure it generates for the farm and its surroundings, and the required aesthetic value, among others.

SME 2 and SME 1 suggest it is also misleading the way that the 2022 JR uses the NAIC codes to categorize land uses. SME 1 explains that, by design, the 2022 JR incorrectly assigned the code 53111 (which corresponds to "lessors of residential buildings") to short-term rental uses, instead of its corresponding specific code, 72119 for "other traveler accommodation." SME 1 and SME 2 consider that this would overestimate the economic impact of short-term rentals or AirBnBs as they would be measured as longer-term residential activity.

Moreover, the proper land use on agricultural reserves becomes obfuscated with the JRs. Starting in 2019, the A-P zoning district starts to apply to farmlands located in agricultural reserves protected by law. Although the JRs try to distinguish between reserves and non-reserve farmlands, SME 2 contended that "there is no representation of one vs the other. If only using the JR's map, all will appear as A-P." SME 2 explained that agricultural reserve laws specify that reserves "can only be amplified, not changed, nor reduced" and considers that the 2019, 2020, and 2022 JRs are abstrusely undertaking the reduction of agricultural reserves. SME 1 also shared, "when you declare land as an agriculture reserve, that land must have the maximum protection possible, with clear and strong definitions to restrict to that use," an action SME 1 considers "muted" by the JRs.

Considering that the JRs increasingly become permissive in land use control, SMEs pointed to the contradictory signal that the government provides with the JRs. SME 3 explained that "when all is allowed as a possibility, one basic concept of planning is lost: particularity." SME 3 added, when a land use is permitted in a place, it must respond to the "territory and the soil...for example, agricultural lands have to take into consideration if it's located in a flood valley, or a steep hill, zoning districts cannot be applied indiscreetly across all of Puerto Rico." Moreover, SME 3 pointed out that the increase of nonagricultural uses threatens the 637,592 acres of land identified on the PUT solely for agriculture.

In this first excavation, I point to "what" is permitted in A-P zoned farmlands by describing what is included and excluded in the five JRs. When examined chronologically, between 2010 and 2022, each iteration of the JRs increasingly permits both agricultural and nonagricultural land uses, including industrial, commercial, residential, tourism, and other uses via consultation. Also, they lack descriptions, definitions, and parameters (including the maximum extension of land that can be occupied by each land use) to help designated gatekeepers and proponents determine compliance. As the JRs become more permissive towards both agricultural and nonagricultural uses, SMEs note a rhetoric of ambiguity, suggesting land use compatibility for uses that are not clearly defined or scaled, which may lead to misinterpretations of the document caused by potential misleading intentions.

6.2. Second excavation: who belongs?

An increase in incompatible land uses permitted on A-P-zoned lands can also increase the potential number of people with varied interests in those lands. For example, farmers interested in agricultural land uses and developers interested in nonagricultural uses would compete when proposing projects on farmland zoned as A-P in Puerto Rico. This leaves the "who" open for a range of possibilities that will depend on the specific demography, its land contractual arrangement, and the characteristics of each plot of land. This second excavation describes SMEs responses to who belongs on farmlands, according to the rhetoric of the JRs.

SME's first response to who could belong on A-P zoned lands was 'farmers', but a particular kind of farmer. For example, SMEs considered *bonafide* farmers and farmland owners that can take advantage and use the additional land uses to invest on their farms are those who would belong on A-P zoned lands. SME 4 posited, "these (new land uses) are activities that could generate additional sources of income for farmers and add value to the real estate market. That is, only if the additional supplementary land use is subjected to a primary agricultural land use." SME 4 considered it to be only beneficial for farmers if they can also sustain agricultural activity. Former PRPB board member, SME 2 explained that, while in office, they noticed that many farmers advocated on behalf of development and construction interests. SME 2 explained "many *bonafide* farmers are actually from the development and construction sector, who retain vast extensions of land with tax exemptions and a reduced or minimum farming activity." SME 2 shared, "there's the Rubí, there's the Stubbe, there's all these families ...the Sadurní ... because they used that category of *bonafide* farmer to retain large extensions of land, without being properly taxed on it."

SMEs did not mention other types of farmers, including tenants, small-scale, or landless farmers, likely because the JRs adheres to private property rights, the corresponding use thereof, and the authority of landowners over proposed land uses. Essentially, only the landowner is permitted to propose projects on their land, meaning tenant farmers are subject to the landowner's desired land use. The most common farmland owners in Puerto Rico are individuals, corporations, and the Land Authority of Puerto Rico. If a tenant farmer is affected by the land use decision made by its landowner, as SME 2 suggested, "the tenant's only recourse is to appeal and complain as provided for in his lease." All uses permitted in the JRs primarily benefit farmland owners, especially those

capable of paying higher land values and taxes. SME 1 expanded on this matter, saying that an increase in land values “could also benefit the government, as the increase in the real estate market could mean more property taxes, if the appraisal does not exceed the exempted value.” This point is important since most of the tax collected by the government is currently obligated to service Puerto Rico’s debt.

The second type of response provided by SMEs included developers from the construction, tourism, and the renewable energy sector. Former PRPB board member, SME 3 stated, “developers buy farmlands because they can easily turn them into residential estates... This includes the Fonalledas family, owners of Plaza las Americas.” Concerned with the unscrupulous practices from developers, SME 1 went on to say that these uses would “benefit people who promote AirBnB, especially those who are property grabbers (*acaparadores de propiedades*).” Moreover, SME 5, an environmental lawyer in Puerto Rico, pointed out that, although it is difficult to examine who can belong on land zoned as A-P without focusing on a specific case, it is worth noting that “the Puerto Rico Energy Bureau has approved Power Purchase and Operating Agreements, as part of the first tranche of Request of Proposals, with foreign corporations who pretend to establish industrial-scale solar farms on valuable agricultural lands to the detriment of the country’s agricultural development.” SME 5 shared that some of these those foreign corporations from Delaware and Florida, included: Ciro One Saline LLC, Ciro Two Salinas LLC, Convergent Coamo Energy Storage LLC, Guayama Solar Energy LLC, Pattern Barceloneta Solar LLC, Pattern Vega Baja Solar LLC, and Solarblue Bemoga LLC.

In this second excavation, I show that although there is not a clear consensus among the SMEs, the JRs certainly welcome nonfarming uses (hence nonfarmers) on productive agricultural lands. Tourists, developers, and speculators would compete with farmers for farmlands. Family-owned farmlands, tenants, corporate, *bonafide* and landless farmers, would potentially be impacted by the construction, tourism, and the renewable energy sector differently. The struggle to belong on productive agricultural land will vary, but the rhetoric used by the JRs normalizes this contradictory struggle across all A-P zoned farmlands.

6.3. Third excavation: how it should appear?

In the third excavation, I share how the permitted land uses in the JRs increasingly enable a particular agricultural landscape for Puerto Rico, and the administrative and governance processes enabling that landscape. With numerous avenues for tax exemption, and residents shouldering the double burden on increased taxes and reduced essential services (particularly after PROMESA), the circumstances set forth by the JRs could be translated into the potential rapid conversion of productive agricultural lands to incompatible urban, commercial, tourism, and industrial land uses.

The SMEs shared that they expect a fast-paced transformation of farmlands in Puerto Rico. According to the SMEs, the agricultural landscape envisioned for Puerto Rico by the JRs leaves all land zoned as A-P, including agricultural reserves, vulnerable to development pressures. With an apparent availability, as cheap developable land, the land most suitable for food production becomes a source for speculation and urbanization. For SME 1, the PRPB is using the JRs to support an agricultural transformation without the required discretion or evaluation of decision-making processes. SME 1 stated, “the JRs are commercializing agricultural lands in a ministerial way, bypassing the permit evaluation process, changing the character of the landscape, and limiting the profitability of agricultural activity.” SME 1 suggested this would entail an “aggressive development pressure and an increase in land value and cost” for productive agricultural lands. The pace and spread of this development pressure can be expected to increase by how the permit and evaluation processes becomes streamlined (through ministerially granted permits) and by how the JRs applies homogeneously across all of Puerto Rico. SME 2 added that they are concerned about the fact that farmlands in Puerto Rico were already under threat, as there are few

controls over what is permitted, even for agricultural activities. SME 2 shared, “Puerto Rico has very few controls for the use of practices that are not environmentally friendly and for the application of pesticides and fertilizers. In Puerto Rico it’s a free-for-all, and on A-P zoned land, this would be allowed.” The 2019, 2020, and 2022 JR include agroecology (which does not favor the use of synthetic pesticides) as a permitted land use, but instead of encouraging and promoting more sustainable agriculture practices when including these uses in the JRs, the JR’s rhetoric makes agroecology, and even farming, an optional land use in A-P zoned lands.

SMEs suggest A-P zoned farmland would also be impacted by rapid parcellation. SME 2 pointed out that residential land uses, without the “association with agricultural activity” requirement, would incentivize land subdivision or parcellation, and further urbanization of the agricultural landscape. SME 2 detailed that *agrimensores*, or surveyors, have incisively advocated for land parcellation, as this is one of their main sources of income. SME 2 explained, “if I divide a 100-acre farm into 100 single-acre farms, I am allowed one dwelling for each of those single-acre farms, independent of whether it is a residence for a farmer.” In other words, land parcellation would turn a former primary agricultural landscape into a parcellated residential area. SME 3 added that “the parcellation of farmland, reduces its capacity to be productive agricultural land.” SME 3 explained, “this is why various countries restrict land parcellation.”

The interpretation of the JRs by planning and permit officers, and who is assigned to that position, will also impact how farmland is transformed. SME 1 pointed out that the 2015 JR gives discretionary powers to the director of the *Oficina de Gerencia y Permisos* or OGPE (position appointed by the governor of Puerto Rico to a person that is not required to have a planning license nor expertise), to determine compliance of all land-use variations, and its corresponding evaluation of the confiscation of the fullest economic gain of the property. Besides the interpretation of this director, SMEs found problematic that designated gatekeepers at the municipal planning offices and permit offices will have to decide if the permit will require a discretionary process, an exception, or be ministerially approved (i.e. for uses under the column called “others”). Similarly, the gatekeeper would also have to decide if the proposed scale of the project fits the criteria of proper land use for productive agricultural land, and if the use is aligned with the purposes of agricultural reserves. SME 1 considered, “when you give such discretionary power to one person—without providing that person clear evaluation criteria—the government is giving that person a blank check.” According to the 2015 JR the designated gatekeeper responsible of these decisions is the director of the OGPE, and since the 2019 JR, this role has been assigned to private “authorized inspectors.”

The absence of clear definitions and parameters, combined with the technicality of zoning jargon, could lead to an agricultural landscape transformation with minimal community engagement. Moreover, SME 2 suggests that the most deplorable part of the proposed agricultural landscape is that the people of Puerto Rico would potentially welcome this transformation due to the misleading rhetoric used in the JRs. “They [the PRPB] use ‘eco’ concepts to try to market the Joint Regulation. Concepts such as ‘agroecology, agro-lodging, eco-lodging,’ and even ‘renewable energy’ give the impression of a sustainable transformation,” SME 2 shared. Even when the JRs refers to guideline requirements, SME 2 also explained that “ecotourism projects, eco-lodges, and agro-lodges must comply with the Design Guidelines for Ecotourism and Sustainable Tourism Facilities of the Tourism and Agritourism Company,” but the “tourism company and the DMO [or the Destination Marketing Organization] are very lax in terms of the criteria for classifying any lodge as an agro- or eco-lodge.”

As an example of the technical nature of zoning SME 1 explained the role that “categorical exclusions” would play in the rhetoric of the JRs in this transformation:

This concept [of categorical exclusions] can be found in the latest versions of the JRs, but it is also defined by the Puerto Rico Department of Natural Resources. Categorical exclusions are a process to by-pass or ignore the required environmental evaluation process, and in its rhetoric the latest JRs say that “if the permit is granted in a ministerial way, it means that a categorical exclusion is automatically approved.” So, if you do agro-lodging on agricultural land, it’s a ministerial process because they’re adding it as a permitted use in the JR. Which means that if I was the proponent of the project, I don’t have to do environmental assessments because they automatically qualify for a categorical exclusion. Wow. I can’t believe that I am saying these things, and somebody actually understands me.

Besides gatekeepers, and developers, the JRs could put farmers in charge of playing a role in the farm-to-urban conversion of the most valuable farmlands in Puerto Rico. SME 1 expanded on this, saying “the JRs makes farmers almost like realtors, because they have too broad of a catalog of alternatives that are not necessarily conducive to the primary intended use,” and expects farmers to be “negotiating with planners, with renewable energy projects, agro-lodging, hotels, and AirBnBs [developers]... that are being approved in a ministerial form.” Instead of restricting land parcellation or land use change in the most productive farmlands, the conversion of these lands could be subjected to the economic pressure experienced by the farm owner. As SME 1 puts it, the JR is, in essence, forcing farmland owners to “look for income alternatives, such as solar panels” to pay taxes, which will be in service of the debt.

In this third excavation, I answer “*how*” belonging is enabled for a particular agricultural landscape for Puerto Rico. In essence, the SMEs suggest that the JRs will prompt a rapid conversion of farmland, driven by various factors including the influence of gatekeepers, the community’s limited understanding of this complex topic, and the heightened development pressure faced by farmers. While farmers are forced to use farmland as a commodity to generate income, parcellating land, renting it for industrial-scale renewable energy, or to AirBnBs and short-term rentals, the potential consequence for the agricultural landscape in Puerto Rico is fast-track urbanization, deforestation, and irreversible loss of fertile soil. This also represents a fast-tracked tourism development generating an exclusive and idealized agricultural landscape for the enjoyment of short-term visitors.

7. Discussion

Despite the growing literature on exclusionary zoning, the exclusion of agricultural activities and farmers on productive agricultural lands remains understudied. Scholarship on exclusionary zoning has primarily focused on urban areas. For example, it has studied *restrictive* zoning policies, such as single-family-only or R1 zoning, and its impact on racial-ethnic segregation and exclusion (Pendall, 2000; Rothwell, 2011), and affordable housing development (Rothwell and Massey, 2010). However, as this paper illustrates, *permissive* zoning policies can also become exclusionary for certain groups and land uses. While some zoning scholarship calls for the elimination of restrictive R1 zoning policies to facilitate the potential for upzoning and density development (Manville et al., 2020), this paper underscores the importance of designing land use policies that are not one-size-fits-all but are instead carefully tailored to specific contexts and people.

The permissive land development codes (or JRs) discussed in this paper are exclusionary for agricultural uses and farmers due to their ambiguous, incomplete, and misleading rhetoric, which fails to account for contextual differences across the archipelago of Puerto Rico. Implemented uniformly on a land area of 3423 square miles (comparable in size to Connecticut), the JRs overlook the diversity of Puerto Rico’s landscape. Specifically, A-P zoned land, which comprises 488,515 acres or 22 % of Puerto Rico, applies equally to tropical forests, remote mountain tops, coastal plains, peri-urban, and urban areas. By

permitting incompatible and non-agricultural uses on limited valuable farmlands zoned as A-P, including agricultural reserves, the government is promoting the permanent loss of farmlands in Puerto Rico through farm-to-urban land conversion, transforming the agricultural landscape, and diminishing the presence and belonging of current and future generations of farmers.

Although the rhetoric in the JRs is not solely to blame for the potential transformation of the agricultural landscape of Puerto Rico, the JRs are unquestionably an important tool already identified by the FOMB, OGPE, and PRPB, as it directly regulates what belongs on lands. Influenced by the recent access to federal post-disaster funds made available to Puerto Rico after Hurricanes Irma and María, and the economic pressure exerted by PROMESA and the FOMB to extract resources in the service of the debt, including on publicly-owned agricultural lands (Yarib, 2021), the official planning discourse promotes that productive agricultural land be used as a commodity to generate income, supported by post-disaster funds, and to pay for increasing taxes.

Who belongs on farmlands in Puerto Rico, is obfuscated by the ambiguous rhetoric included in the JRs of what is proper on farmlands, the discretionary power given to ill-informed designated gatekeepers, and the already existing inequities in the food system. For some, the added nonagricultural land uses could potentially provide new economic opportunities, as they could add accessory tourism, commercial, or residential uses to their farmlands, but this will only hold true for farmland owners that are able to invest in their farms. The degree of exclusion from farmlands will vary by demography and the specific circumstances of the farmers, which could force them to rent, sell, make parcellations, or choose to urbanize their lands. In general, making farmers compete with developers and speculators for limited farmlands, or reducing their belonging on farmlands as renters to industrial scale-solar renewable energy projects, lessens farmers’ belonging on the lands most suited for agriculture. The covert *de facto* territorialized politics of belonging of the JRs are making farming and farmer’s belonging as optional on the most productive farmlands in Puerto Rico.

In essence, the *how* is impacted by the (un)regulated land-use policies that distort the imaginary, social relations, and material conditions of Puerto Rico’s agricultural landscapes. For instance, by allowing nonagricultural uses to occupy part or all the farmland area, by leaving land parcellation unrestricted, and by allowing all forms of agricultural activity (from high pesticide and synthetic fertilizer use to none), the representation of the tropical rural aesthetic of Puerto Rico’s farmlands would be potentially lost, not only in the physical landscape but also in the imaginary of new generations. This is not to say that these transformations will be unchallenged, as there will be organizations and groups that will oppose such a loss, but social relations could be distorted by the “acceptable social behaviors and visual aesthetic” (Trudeau, 2006, p. 422) that come when starting to prioritize short-term visitor tourism and development instead of food production. Moreover, the added land use activity on productive agricultural lands would potentially provoke an increase in real estate market, adding more property taxes for farmlands on which the appraisal does not exceed the exempted property value, which could further increase land costs for farmers, local food production, and food costs for consumers. When put together, by intending to be immediately applied across all municipalities and across all land plots equally, the formal criteria of belonging are being determined by a (de)territorial politics of belonging that uses a rhetoric of sustainability but does not consider the territory’s ecological, climatic, demographic, geographic, and socioeconomic diversity, and its existing national, regional, and municipal laws and plans.

Despite the valuable insights gained from this study, it is important to acknowledge its limitations. This paper did not include developers nor farmer’s perspective on the proposed uses in the JRs. Future research can explore how farmers are aware and potentially impacted by the uses proposed by the JRs in their specific farm. Conducting empirical case-by-case analysis of the consequences of implementing the JRs, including demographic information and land ownership could help

discern the specific impacts of the JRs on each plot of land. It could also be important to examine how designated gatekeepers (municipal planners, authorized inspectors, and permit officials) use their discretion when approving projects on productive agricultural lands. Moreover, unveiling the perspective of developers, speculators, and others left out in this study could help shed light on the already complex land-food-energy planning nexus in Puerto Rico.

8. Conclusions

In this paper, I have examined the zoning district A-P across five land use codes (the 2010, 2015, 2019, 2020 and 2022 JR) to understand what land uses are permitted, who can belong on farmlands, and how the agricultural landscape of Puerto Rico is expected to look like. Employing policy archeology and genealogy, and literature on the territorialized politics of belonging, I extracted pieces within the JRs that helped to understand the rhetorical work done by the five JRs for agricultural lands, the government's normative intent for Puerto Rico's agricultural landscape and the groups to whom this rhetoric serves. I contend that in the case of Puerto Rico, the design of a uniform and permissive zoning district for productive agriculture across all farmlands in the archipelago, as proposed in the JRs, poses a paradoxical risk of excluding agricultural activities and farmers from the already limited agricultural land available in Puerto Rico. Moreover, the formal criteria for belonging of the JRs represents state-led discrimination, which prevents certain farmers from contributing to Puerto Rico's essential local food production and the preservation of its fertile soil, as well as from belonging on farmlands. The JR's (de)territorialized politics of belonging do not safeguard farmlands and farmers and promotes farm-to-urban conversion through a permissive and misleading A-P zoning district.

Complicated land-energy-food planning nexuses are not unique to Puerto Rico (see Frimpong Boamah et al., 2020), especially given the global intensification of extractivism by colonial capitalism (Escobar, 1995), particularly under protracted undemocratic governance and militarism (see Raja et al., 2022). However, the case of Puerto Rico explained in this paper illustrates the potential consequences of ill-designed, selectively permissive zoning districts on irreplaceable farmlands, within the context of long-standing policies and practices that treat places as corporate playgrounds (Onís and Lloréns, 2021). Similar patterns have been reported in African cities (Watson, 2014) and places with contested and multi-layered governance regimes where neoliberalism has been unfettered through planning. To ensure the relevance of land-use planning and regulatory tools in supporting farmland protection in such jurisdictions, policy tools should prioritize and protect present and future farmers. This paper uncovers the internal contradictions of agricultural land use planning in Puerto Rico that demand examination and represents just one step in that direction.

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Carol E. Ramos-Gerena: Writing – review & editing, Writing – original draft, Visualization, Validation, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of Competing Interest

none.

Data Availability

The data for this research is in Spanish (policy documents and interview transcriptions).

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Appendix A. Supporting information

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