

5-2019

# Puerto Rico's Coffee Region: A Socio-economic Profile

Carla B. Lee Ms.

Clark University, carlee@clarku.edu

Follow this and additional works at: [https://commons.clarku.edu/idce\\_masters\\_papers](https://commons.clarku.edu/idce_masters_papers)

 Part of the [Environmental Studies Commons](#), [International and Area Studies Commons](#), and the [Urban Studies and Planning Commons](#)

---

## Recommended Citation

Lee, Carla B. Ms., "Puerto Rico's Coffee Region: A Socio-economic Profile" (2019). *International Development, Community and Environment (IDCE)*. 224.

[https://commons.clarku.edu/idce\\_masters\\_papers/224](https://commons.clarku.edu/idce_masters_papers/224)

This Research Paper is brought to you for free and open access by the Master's Papers at Clark Digital Commons. It has been accepted for inclusion in International Development, Community and Environment (IDCE) by an authorized administrator of Clark Digital Commons. For more information, please contact [mkrikonis@clarku.edu](mailto:mkrikonis@clarku.edu), [jodolan@clarku.edu](mailto:jodolan@clarku.edu).

Puerto Rico's Coffee Region: A Socio-Economic Profile

Carla B. Lee

May 2019

A Master's Paper

Submitted to the faculty of Clark University, Worcester, Massachusetts, in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Community Development and Planning

And accepted on the recommendation of

Prof. Ramón Borges-Méndez, Chief Instructor

Abstract

Using demographic, social, and economic information from the US Census Bureau, this study portrays the current conditions of Puerto Rico's Coffee Region. There is evidence for the decline of the overall population in Puerto Rico, specifically younger groups, while women are economically disadvantaged in this region. Although there has been significant decline in the agricultural sector as a percentage of GDP, coffee holds significant potential to improve overall economic growth in the region.

*Keywords:* Socioeconomic Profile, Puerto Rico, Coffee, Agriculture, Reconstruction, Gender, Supply Chains

Ramon Borges-Mendez,  
Ph.D.  
Chief Instructor  
Cynthia Caron  
Ph.D.  
Second Reader

**Contents**

Abstract.....	2
Puerto Rico's Coffee Region: A Socio-Economic Profile.....	5
Literature Review.....	6
Puerto Rico: Economic Crisis and Decline .....	6
Gender .....	9
Coffee and Agriculture .....	11
Methods .....	12
Background.....	13
Disasters, Women, and Coffee .....	13
Gender, Agriculture and Supply Chains.....	14
Analysis .....	17
Adjuntas.....	17
Demographics .....	17
Industry and Employment .....	19
Social Assets and Vulnerabilities .....	20
Agriculture .....	21
Ciales .....	23
Demographics .....	23
Industry and Employment .....	25
Social Assets and Vulnerabilities.....	27
Agriculture .....	28
Jayuya .....	29
Demographics .....	29
Industry and Employment .....	31
Social Assets and Vulnerabilities.....	32
Agriculture .....	33
Lares .....	35
Demographics .....	35
Industry and Employment .....	37
Social Assets and Vulnerabilities.....	38
Agriculture .....	39
Las Marias .....	40
Demographics .....	40
Industry and Employment .....	42
Social Assets and Vulnerabilities.....	43
Agriculture .....	44

Maricao.....	46
Demographics .....	46
Industry and Employment .....	48
Social Assets and Vulnerabilities.....	49
Agriculture .....	49
Orocovis .....	51
Demographics .....	51
Industry and Employment .....	53
Social Assets and Vulnerabilities.....	54
Agriculture .....	55
Utuado .....	56
Demographics .....	56
Industry and Employment .....	58
Social Assets and Vulnerabilities.....	60
Agriculture .....	61
Yauco.....	62
Demographics .....	62
Industry and Employment .....	64
Social Assets and Vulnerabilities.....	66
Agriculture .....	66
Puerto Rico .....	68
Demographics .....	68
Industry and Employment .....	70
Social Assets and Vulnerabilities.....	71
Agriculture .....	72
Results.....	74
Demographic Characteristics.....	74
Economic Characteristics .....	76
Social Assets and Vulnerabilities .....	78
Agriculture and Production .....	79
Policy Implications and Recommendations.....	82
References.....	83

### **Puerto Rico's Coffee Region: A Socio-Economic Profile**

After Hurricane Maria hit Puerto Rican territory on September 20, 2017, much attention was brought onto the U.S. Commonwealth. The tropical cyclone caused an estimated \$90 billion in damages, including the destruction of the electric grid and 80 percent of the agricultural sector. In addition, the natural disaster has been attributed a death toll of about 1054 people, thousands of homeless, and an exodus of over 215,000 people to the mainland. (Brown, Murphy, Welton, Torres, Rosario, & Meeker, 2018)

The economic and political climate prior to the disaster exacerbated the impact of the hurricanes in the territory. In 2015, public debt in Puerto Rico amounted to 95.1 percent of the country's Gross National Product (GNP), while debt servicing had reached 5 percent of the island's Gross Domestic Product (GDP). Total debt was estimated at \$71.5 billion, while roughly 44 percent of the country's population fell under the poverty line. With the economy being highly dependent on US capital and markets, the recovery of Puerto Rico has been significantly slow. To this end, the country is in need of new strategy for reconstruction, in order to provide the economy with a necessary boost.

Historically, agriculture has been a significant component of the Puerto Rican economy. Primarily based on exports of coffee, and later on, sugar, the country meets the necessary conditions to develop agriculture as a way to enhance economic growth. Moreover, a significant portion of the population lives in rural areas, including those who are most vulnerable in the face of climate change and natural disasters. Women in rural areas represent some of the most vulnerable populations, while encountering greater challenges than their male counterparts. Access to land, resources, and capital limit their ability to achieve economic growth, and

pathways out of poverty. In this light, the reconstruction of Puerto Rico's coffee region calls for gendered approaches to ensure the participation of women in rural economies.

### **Literature Review**

#### **Puerto Rico: Economic Crisis and Decline**

The critical conditions of the Puerto Rican territory are not new. A product of social and economic policies as a US territory, Puerto Rico has been vulnerable since the beginning of the twentieth century, mainly due to a lack of authority of its own economy and government.

(National Puerto Rican Chamber of Commerce) The Jones Act of 1917 created an elective legislature for Puerto Rico. However, multiple government positions including the governor, attorney general, auditor, and commissioner of education continued to be appointed by the US president. The territory is also required to maintain the federal minimum wage, and apply the same labor and environmental standards as the United States. (Dietz, 1987)

Thus, Puerto Rico's economic life has been inevitably tied to the interests and decisions of US capitalists and the US economy. (Dietz, 1987) The detrimental economic situation in Puerto Rico at the time Hurricane Maria hit in 2017 is a result of concerns in multiple dimensions, including labor supply and demand, entrepreneurship, the fiscal situation, financial markets, and trade. (Collins, Bosworth, & Soto-Class, 2007)

Operation bootstrap was the national strategy that shifted Puerto Rico's economy from an agrarian to an industrial society, based in labor-intensive manufacturing. The main goal was growth of output, primarily based in orthodox economic principles. These economic alterations put the Commonwealth in the path towards industrialization, with growing dependence on US capital and markets. In 1940, agriculture employed 44.7 percent of labor force and

manufacturing 10.9 percent. By 1980, agriculture had declined to 5.2 percent, while manufacturing comprised 19 percent of the territory's GDP. (Dietz, 1987)

Section 936 of the U.S. Tax Reform Act in 1976 was a major determinant in Puerto Rico's economic crisis. Through the enactment of this policy, U.S. business corporations were exempted from U.S. federal taxation of any profits earned in Puerto Rico. As of 1974, U.S. corporate direct investment constituted 80 percent of the GDP. By 1980, this number had increased to 97 percent of the GDP. Firms taking advantage of this subsidy were primarily capital-intensive high-tech U.S. manufacturers, and the policy saved these businesses an average of about 2.5 billion per year. (Page-Hoongrajok, Chakraborty, & Pollin, 2017)

Nevertheless, resulting benefits from this policy were directed towards U.S. Corporations, and not Puerto Rico's local economy or its people. The difference between the island's GDP and the GNP shed light on this discrepancy. By mid-1970s, Puerto Rico's economic growth was thriving, increasing by 30 percent of the US average in 1950, to 75 percent in 1980. However, GNP fell to 76 percent of GDP in 1980, 68 percent in 1990, 67 percent in 2000 and 66 percent in 2010. (Page-Hoongrajok et al., 2017) (Collins et al., 2007)

Moreover, worker productivity did not improve in the next few decades. In combination with this stagnation, labor force participation in the island was significantly low at 36 percent of the total population in 1980, falling from 49 percent in 1950. Furthermore, an increase in outbound flow of capital paid on foreign direct investment led to a sharp decline of Gross National Income, which dropped to 62 percent of Gross Domestic Product (GDP) by 2004, from 107 percent in 1950) (Collins et al., 2007) Under the presidency of Bill Clinton, Section 936 was phased out, as a measure to reduce U.S. fiscal deficit, leaving the island with a weak economy and no strategy for economic growth. (Page-Hoongrajok et al., 2017)



Between 2007 and 2016, Puerto Rico's annual GDP growth rate was -1.1 percent. The economic situation in the island was also negatively impacted by the global financial crisis, the Great Recession, and slow recovery rates at a global scale. Puerto Rico's manufacturing industry had the most impact throughout the phase-out, with manufacturing establishments declining by one third of its total (from 3,000 to 2,000) between 2000 and 2012. Employment in manufacturing declined by over 50 percent, from an average of 150,000 in 1997 to less than 74,000 in 2015. (Page-Hoongrajok et al., 2017)

The decline on economic productivity, and the outflow of capital resulting from 936 deteriorated Puerto Rico's fiscal conditions. During the enactment of the policy, the island instituted the tollgate tax, a 10 percent repatriation tax towards Puerto Rico, which represented a major source of government revenue. With the phase-out of 936, revenue from tollgate tax was also cut. In 1994, tollgate taxes generated \$225 million. By 2015, it had declined to only \$4 million.

Under these conditions, the public sector turned to debt as a resource to keep the economy afloat. In 1997, total public debt was at 60.3 percent of GNP. By 2015, this ratio escalated to represented 95.1 percent of GNP. (Page-Hoongrajok et al., 2017) According to Puerto Rico's financial statement of 2014, debt servicing had reached 5 percent of the island's GDP and 23 percent of total expenditures. (Page-Hoongrajok et al., 2017) Furthermore, an overview of the Commonwealth's fiscal condition by the Government Development Bank, total debt amounted to \$71.5 billion in 2016. With no capacity to pay off, Puerto Rico now faces bankruptcy and is most likely to default on this debt.

## Gender

After the U.S. inherited the Puerto Rican territory, many men and women were employed within the agricultural sector, primarily in the sugar cane fields, as a classic monoculture colony. Conditions for workers in the agricultural sector were poor: long hours, and low wages. During harvest seasons, wages for men ranged from 50 to 60 cents per day, and between 18 to 32 cents for women. The number of males migrating to sugar regions was larger, often by as much as 50 percent, than the number of females, constituting a forceful and socially disrupting migration pattern. (Dietz, 1987)

By 1930, in both rural and urban areas, women workers earned less than men at whatever they did. Overall, there were more women workers than men. In tobacco trade, roughly 80 percent of workers were women, and this group constituted almost 85 percent of garment production.(Dietz, 1987) Increasing numbers of women were being incorporated to the labor force, paired with increasing unemployment among men. “Women had to work to supplement the low, irregular, or nonexistent incomes of male members of their families, who typically were involved in different economic sectors.” (Dietz, 1987, p.130) Between 1930 and 1940, the number of employed women grew by 17.9 percent, from 122,488 to 144,360. About one third of all female workers were employed in needlework production, one of the lowest paid of all sectors. More than 60 percent of needle workers earned 2 cents per hours or less. Female workers felt pressured to supplement family income, forced to accept work at any wage. (Dietz, 1987 p. 142)

The condition of women changed dramatically after the re-structuring of the Puerto Rican economy through Operation Bootstrap. Research suggests that this transitional period impacted the division of labor, with women's roles now including an expectation of female employment.

Women acquired access to independent earnings, education, among other social and juridical rights. Furthermore, this contributed to greater participation in the public sphere, household economic decisions, and less tolerance for male authoritarianism, control, unfaithfulness, or violence. (Colon Warren, 2010)

In the early stages of industrialization, women constituted the primary labor force, due to high availability and cheap cost. Between 1960 and 1970, more than half of all new jobs created were directed towards women, and by 1988 they constituted 47 percent of employment in the manufacturing sector. (Safa, 1994) According to Safa, throughout the 1980's, Puerto Rican females experienced a bifurcation: younger, more educated women were being attracted to better-paying white-collar jobs in the government; while older, less-educated women remained in declining manufacture industries.

The apparel industry was a major source of female employment in manufacturing in the 1980s. Although industrialization intended to provide employment for males displaced from agricultural production, women became the primary labor force in factories. Shifts in migration increased unemployment rates, especially for men. Between 1950 and 1980, male labor rates declined by roughly 20 percent, as a result of agricultural decay and decline of emigration after 1970s. Higher educational attainments also kept many men and women out of the labor market. However, this impact was less evident on women, whose participation rates increased to 31.4 percent in 1990.

Conscious state policies to upgrade the labor force and reduce population growth led to improvements in the occupational profile of women, and their higher participation rates. Moreover, rising cost of living, in combination with higher unemployment rates among men made it necessary for both to contribute to the household economy. (Safa, 1994) Despite the

incorporation of women in the labor force, wages have failed to meet the economic needs of the island's poor. In 1990, the percentage of households headed by women rose to 23.2 percent, and 23.8 percent in 2017. (Safa, 1994; Dietz, 1987)

Despite the growth in female employment in the island throughout the 70's and 80's, this figure remained stagnant at around one third of working age until 2010. After 2000, lower-educated men and women were most affected by declining employment. This period represented the end of the remaining manufacturing industry that contributed to the employment of women in the 1950s. (Dietz, 1987)

To this end, decreasing male employment combined with female expectation of economic contributions have led Puerto Rico to an increase in marital dissolution and female headed households. Increasing numbers of women have become female heads of the household, facing greater economic insecurities for themselves and their families. According to Colon Warren, women's work in the territory must be understood in the context of social and gender equity: male unemployment enhances marital conflict, while increasing economic instability within the family. Thus, Puerto Rican women now face more burden in fulfilling both traditional gender roles, as well as primary economic support for their families. (Colon Warren, 2010)

### **Coffee and Agriculture**

Historically, coffee has been a major crop in Puerto Rico's agricultural production after being introduced by Spanish colonizers in 1736. By the end of the 19<sup>th</sup> century, coffee had surpassed sugar, becoming the main cash crop for exports. (Dietz, 1987, p.99) However, this success stalled after American occupation of the territory. Multiple factors, both natural and manmade, led to the decline of coffee production. These included natural disasters, migration, and US policies that limited trade relations between Puerto Rico and other countries. In addition,

conditions left after the Great Depression led to the total destruction of the coffee industry, which never recovered from the severe decline. However, coffee remained an important cash crop for many small farmers, mostly destined for local consumers. In 2012, coffee was one of the top five productive activities of (Puerto Rico's GNP. Dietz, 1987) (Caron & Borges, 2018) Hurricanes Irma and Maria brought increasing challenges to the coffee sector, by causing damage in more than half of the coffee region in the island.

### **Methods**

The main question of this study is to understand the current social and economic conditions in 9 municipios of Puerto Rico's coffee region: Adjuntas, Ciales, Jayuya, Lares, Las Marias, Maricao, Orocovis, Utuado, and Yauco; and compare them to the national average in Puerto Rico. Moreover, this study looks at the impact of the Hurricanes Maria and Irma in these territories, and their overall effects in two areas: agriculture and gender.

Taking into consideration the recent natural disasters, and the alarming economic, social, and political conditions in Puerto Rico, it is necessary to develop a baseline for strategic planning in this particular region. Using multiple resources, including the USDA Social Economic Profile Technical Guide, this study intends to serve as a guideline to approaching the reconstruction of the coffee region in the U.S. Commonwealth. After conducting a preliminary literature review, relevant social and economic variables were selected, prioritizing those that better depicted the current conditions of the selected municipios, based in the island's coffee highlands.

A socio-economic profile attempts to describe the social and demographic conditions of a particular community, and is necessary to address the community's needs. (United States Department of Agriculture [USDA], 2006) These profiles are mainly used by officers, staff, social scientists and similar entities for strategy and decision making. They establish baselines

for planning and management decisions, provide understanding of the context in which decision-making takes place, provide key demographic and economic characteristics, and serve as a base for predicting effects of particular actions.

Following the municipio selection, data was collected from multiple databases including U.S. Census Bureau Census Data from 2000, 2010, and estimates for 2017; the American Community Survey, and the Census of Agriculture. Data reliability and validity are substantiated by the US Census Bureau's standards for data collection, processing, and non-sampling errors. After constructing the database, tables and graphs were built using data from a combination of these sources. The final analysis is a result of the overview of the data collected throughout the study, while policy and action recommendations are based on the selected literature.

## **Background**

### **Disasters, Women, and Coffee**

The Caribbean has been identified as a region of high vulnerability to the effects of climate change, mainly due to the region's exposure to extreme weather, geographic and economic scale, and reliance on imported goods. (Gould, Fain, Pares, McGinley, Perry & Steele, 2015) Factors contributing to these risks include vulnerable food supplies, potential vulnerabilities to pests and introduced species, coastal settlements of the population, and high population density. Under these vulnerable conditions, Puerto Rico is prone to natural disasters, as exemplified by the devastating effects of Maria and Irma.

In 2017, Hurricane Maria and Irma devastated the Puerto Rican territory, directly killing 64 people, and an estimated death toll of 4,645 people. The natural disasters left behind an estimated USD\$90 billion in damages, the destruction of the electric grid, and the destruction of 80% of the agricultural sector. (Brown et al., 2018) Federal response to the disaster was slow,

while blame was placed on the island and its economic crisis. The federal disaster aid of 4.9 billion was not enough, showing great inadequacy in response to the crisis. (Brown et al., 2018)

The reconstruction of agriculture, and more specifically, the coffee sector faces growing challenges due to climate change. Anticipated warming and drying in Puerto Rico is beyond regional averages, which could impact the country's ability to produce this crop. However, adaptive practices can be used to address the multiple challenges faced by coffee farmers. Furthermore, recent studies suggest coffee presents great potential in providing a sustainable economic base for the island. (Brown et al., 2018)

### **Gender, Agriculture and Supply Chains**

In recent years, the importance of women as essential economic actors has been brought to the center of development strategies. Initiatives promoting women's participation in employment, achieving gender equality, and broadening opportunities for girls have expanded significantly over these past years. However, many women around the world are still facing gender-based discrimination, remain in sex-stereotype occupations, and continue to be remunerated poorly in vulnerable work conditions. The gender wage gap is a reality in many countries, where women are paid much less than their male counterparts for the same work. Thus, women face higher economic risks, and more likely to be economically disadvantaged. (International Labour Organization [ILO], 2010)

In the State of Food and Agriculture 2010-11, the Food and Agriculture Organization conveyed key messages regarding the intersection of Women and Agriculture in developing countries. More than 43 percent of agricultural labor force in these countries is comprised by women. Evidence showed that across regions, women had less access to resources and opportunities than men, and that the gap was found for multiple assets including land, livestock,

labor, technology, education, and financial services. Furthermore, the report estimated that closing the gender gap in the agriculture sector could potentially increase agricultural production and yields. (ILO, 2010; Quisumbing, Meinzen-Dick, Raney, Behrman, & Peterman, 2014)

Gendered patterns of control and ownership of assets have also become relevant within economic development. Increasing control of assets creates pathways out of poverty, especially for women, since they can generate products or services that can be used for consumption or to generate income. (ch 2) Literature shows that households do not necessarily pool resources or share preferences in how income should be spent, which primarily impacts women and children. Evidence suggests that women ownership of assets may improve child health and nutrition, agricultural productivity, and income. (ILO, 2017; Quisumbing et al., 2014) Gendered role expectations and gender relations within the household may limit women's ability to access resources. In addition, men and women are sometimes concentrated in different sectors, which means they have different positions within the work environments. Women tend to be concentrated in fewer sectors, and face greater constraints in accessing global value chains (GVS) and economic opportunity. (Bamber, & Fernandez-Stark, 2013)

Increasingly, economic growth strategies turn to supply chains as a method to improve competitive advantage for agricultural workers and create value for consumers. A supply chain represents "the total flow of physical goods from suppliers to ultimate users", and involves raw materials or products that link together multiple actors. (ILO, 2018) Within development, the goal is to improve the conditions of small producers within these supply chains, taking into account disparities of gender in accessing these supply chains. Often times, the value generated in a supply chain is not captured by developing countries. Many rural areas are linked to supply



chains, through formal or informal employment, impacting productivity through employment creation and work.

In this light, the International Labor Organization promotes gender-sensitive policies to improve the condition of women in global supply chains. Collaborations between trade unions, governments, local suppliers, and civil society organizations are necessary to improve economic growth in developing countries. Furthermore, these collaborations create genuine links between actors in the supply chain, increases transparency, and leads to higher added-value activities.

(ILO, 2017)

## Analysis

### Adjuntas

#### Demographics

Adjuntas has a total estimated population of 18,525 habitants. While this number increased by 1.8 percent in the 2000-2010 period, it decreased by more than twice this number between 2010 and 2017 (4.9 percent). Sex distribution has remained steady, with an estimate of 49.8 of the population being female.

Demographic Characteristics	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Total Persons	19143	19483	18525	1.8%	-4.9%
Population Density (population per sq. mile)	287	292	-	1.7%	-

Sex Distribution	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Female Persons, percent	51.1	51.1	49.8	0.0%	-2.5%

Age Distribution	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Persons under 5 years, percent	7.6	6.2	5.2	-18.4%	-16.1%
Persons, 5 - 19	28.1	22.8	14	-18.9%	-38.6%
Persons, 20 -64	53.8	57.6	65.1	7.1%	13.0%
Persons 65 years and over, percent	10.4	13.3	17	27.9%	27.8%
Median Age	30.3	36	39.5	18.8%	9.7%

The age of the population in the municipio has shifted significantly, with high increase in older groups. Children under 5 decreased by 18.4 percent and 16.1 percent in the periods between 2000-2010 and 2010-2017 respectively. Likewise, the number of persons aged 5-19 declined by 18.9 percent and 38.6 percent in the same timeframe. People aged 65 and over are now estimated to comprise 17 percent of the population, almost double the amount that they

constituted 17 years prior. In the same period, the median aged increased from 30.3 to 39.5 years old.

<b>Residence</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
Urban, percent	57.1	56.5	-	-1.1%	-
Rural, percent	42.9	43.5	-	1.4%	-
<b>Household Characteristics</b>					
Total households	5895	6851	6166	16.2%	-10.0%
average household size	3.24	2.83	-	-12.7%	-
<b>HH family type</b>					
family	83.5	77.8	71.8	-6.8%	-7.7%
non-family	16.5	22.2	28.2	34.5%	27.0%
Female HH no husband present	17.6	20.1	22.9	14.2%	13.9%
<b>Housing</b>					
Total housing units	6715	8125	7705	21.0%	-5.2%
<b>Occupancy</b>					
Occupied	87.8	84.3	80	-4.0%	-5.1%
Vacant	12.2	15.7	20	28.7%	27.4%
<b>Tenure (Occupied HH)</b>					
Owner occupied	71.9	67.4	54.6	-6.3%	-19.0%
Renter Occupied	28.1	32.6	45.4	16.0%	39.3%

The distribution of urban and rural residence remained steady in the 2000-2010 period, with 56.5 percent of the population living in urban settings in Adjuntas. The total number of households located within the area is estimated to be 6166 in 2017, which declined by 10 percent since 2010. The average household size in 2010 was 2.83 persons per household. There has been significant decline in the number of family households, and a corresponding increase in non-family households. In the 2010-2017 periods, the number of family households decreased by 7.7 percent, while non-family households increased by 27 percent from the previous estimate.

Adjuntas is home to an estimate of 7705 households, declining by 5.2 percent since 2010. 20 percent of households are vacant. Within the 80 percent of occupied households, 54.6 percent are owner occupied, while 45.4 percent are rentals. This proportion has varied in the past

few decades, as the percentage of households occupied by owners decreased by 6.3 percent between 2000-2010, and by 19.0 percent between 2010 and 2017. The median house value is estimated to be 81,700 in 2017, which fell by 6.7 percent since 2010.

### Industry and Employment

Industry	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Agriculture, forestry, fishing and hunting, and mining	13.8	8.9	6.8	-35.5%	-23.6%
Construction	13.1	7.6	4.7	-42.0%	-38.2%
Manufacturing	10.2	13.6	8.2	33.3%	-39.7%
Educational, health, social services	23.6	26.9	32	14.0%	19.0%
Arts, entertainment, recreation, accommodation, food services	4	5.8	10.1	45.0%	74.1%
Retail trade	10.1	6.4	9.8	-36.6%	53.1%

The structure of industry in the municipio has changed in the past decades. The most significant change we can observe is an increase in the proportion of educational, health and social services as a part of the overall economy. This number grew by 14 percent between 2000 and 2010, and continued to increase by 19 percent between 2010 and 2017. The proportion of people employed in this sector amounts to 32 percent of all employment in the area. Similarly, Arts, entertainment, recreation, accommodation and food services increased from 4 percent to 10 percent. There has been decline in the primary sector, with agriculture, forestry, fishing and hunting, and mining decreasing from 13.8 percent to almost half (6.8 percent) in 2017.

Income	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
per capita personal income	4975	5974	7117	20.1%	19.1%
Median HH income	9888	11983	11680	21.2%	-2.5%

Per capita personal income in Adjuntas in 2017 was approximately USD\$7117.00, which increased by almost 20 percent since 2010. In the same timeframe, median household income decreased by 2.5 percent, remaining relatively steady.

<b>Employment</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
Total civilian labor force, percent of population age 16+ years	35	37.7	42.2	7.7%	11.9%
Not in Labor Force	65	62.3	57.8	-4.2%	-7.2%
Unemployment Rates	10.8	7.8	17.3	91.7%	121%
<b>Gender of Labor force</b>					
In civilian labor force, female, percent of population age 16 years+	27.2	30.7	38	12.9%	23.8%

Employment in the municipio has increased steadily in the past two decades. Between 2000 and 2010, the total civilian labor force grew by 7.7 percent, going from 35 to 37.7 percent of the total population. Between 2010 and 2017, it increased by 11.9 percent, reaching a total 42.2 percent of the population. In the same way, people who are not in the labor force fell by 7.2 percent in the 2010-2017 period, now comprising 57.8 percent of the population. Unemployment rates fell by 121 percent during this period, going from 7.8 to 17.3 percent of the population. The percentage of the female population who are part of the civilian labor force increased by 23.8 percent from the 2010 estimate, with a total of 38 percent of females now part of the labor force.

### **Social Assets and Vulnerabilities**

Educational attainment of the population in Adjuntas has been on the rise since 2000. In the 2000-2010 period, the percentage of the population who held high school degrees or higher increased from 47 percent to 58.4 percent, experimenting a 24.3 percent increase. This percentage increased even more in the past decade, with an estimated 63.2 percent of the population attaining a minimum of a high school degree. The percentage of the population

attaining a bachelor's degree or higher also increased, going from 10.9 percent of the population in 2000, to an estimated 18.1 percent of the population in 2017.

<b>Educational attainment</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
High school graduate or higher, percent of persons 25 years+	47	58.4	63.2	24.3%	8.2%
Bachelor's degree or higher, percent of persons age 25+ years	10.9	14.6	18.1	33.9%	24.0%
<b>Poverty and persistent poverty</b>					
Individuals below poverty level, percent	65.4	59.3	64.1	-9.3%	8.1%
<b>Income maintenance and public assistance</b>					
specific pulic assistance programs (HH w/food stamps/SNAP in past 12 months)	-	46.9	53.4	-	13.9%
Gross rent as a percent of HH Income is 35 percent or more	-	49.7	46.7	-	-6.0%

Despite the boost in educational attainment, poverty levels in the area have remained significantly high. In 2000, 65.4 of the population in Adjuntas was living below the poverty level. By 2010, this number decreased to 59.3 percent, experimenting a 9.3 percent decrease from the previous level. However, in 2017, the overall percentage of the population living in conditions of poverty were estimated at 64.1 percent. In addition, 53.4 percent of the population in the area receive support from specific public assistance programs, while 46.7 percent pay more than 35 percent of their household income on rent.

### **Agriculture**

<b>Farms and production</b>	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>% Change</b>	
				<b>2002-2007</b>	<b>2007-2012</b>
Number of farms	1498	1008	1328	-32.7%	31.7%
Land in farms (cuerdas)	25864	21192	19947	-18.1%	-5.9%
<b>Land Use</b>					
Harvested (no. of farms)	1488	981	1295	-34.1%	32.0%
Used for pasture or grazing (no. of farms)	40	71	98	77.5%	38.0%
<b>By tenure of principal operators (no. of farms)</b>					

Full owners	1366	876	1220	-35.9%	39.3%
Part owners	74	93	25	25.7%	-73.1%
Tenants	58	39	83	-32.8%	112.8%
<b>principal operator characteristics</b>					
Hired farm workers (number)	1760	2245	2074	27.6%	-7.6%
Agregados and sharecroppers	108	193	236	78.7%	22.3%
<b>Principal operators by sex</b>					
Male	1336	817	1196	-38.8%	46.4%
Female	162	111	20	-31.5%	-82.0%
N/A	0	80	112	-	40.0%

In 2012, Adjuntas municipio counted with a total number of 1328 farms and 19,947 cuerdas of land. While the number of farms decreased in the 2002-2007 period, in 2012 it was estimated to have increased close to the amount of farms estimated back in 2002. In 2012, 1295 farms were used for harvesting, while 98 were being used for pasture and grazing.

Tenure status of principal farm operators has not changed dramatically since 2002. The number of farms operated by full owners decreased around 2007, but increased again reaching 1220 farms in 2012. Partial ownership seemed to grow in 2007, but this ownership decreased by 2012, in conjunction with a rise in the number of farms operated by tenants. By 2012, 83 farms were being operated by tenants, a 112.8% increase from the 39 farms being operated by tenants in 2007. To this end, we can see that there has been a shift in tenure, with less farms being operated by part owners, and instead being operated by tenants. In addition, we can observe a slight decline in the number of hired farm workers (2,074 total in 2012), and a steady increase (from 193 to 235 between 2007 and 2012) in the number of agregados and sharecroppers in the past few decades.

In terms of gender, farms in Adjuntas have historically been in ownership of men. In the 2002-2007 period, there was significant increase in the percentage of farms owned by women. However, this number declined sharply by 2012. Out of 1328 farms, 1196 were reported to be

owned by women, 112 farms did not report sex of the operator, and only 20 were reported to be operated by women. This indicates that only 1.5 percent of the total number of farms in 2012 were operated by women.

<b>Market value of agricultural products sold</b>	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>% Change</b>	
				<b>2000-2010</b>	<b>2010-2017</b>
agricultural products sold (dollars)	\$1,277,350.00	\$11,229,817.00	\$12,483,336.00	779.1%	11.2%
crops sold (dollar)	\$12,308,887.00	\$10,642,786.00	\$11,441,513.00	-13.5%	7.5%
coffee (dollars)	\$7,534,217.00	\$7,310,210.00	\$7,311,842.00	-3.0%	0.0%
<b>Income from farm-related sources</b>					
Income (dollars)	-	\$1,226,312.00	\$2,118,946.00	-	72.8%
<b>Crops harvested for sale</b>					
coffee harvested for sale (total coffee, qty harvested in cuerdas)	8019	5662	6714	-29.4%	18.6%

While the number of farms has remained steady, the market value of agricultural products in Adjuntas has been on the rise. In 2012, the total revenue from agricultural products in the area totaled USD\$12,483,336.00 of which USD\$11,441,513.00 resulted from crops sold. In the same year, other income from farm related sources amounted to USD\$2,118,946.00. The total market value of coffee crops summed USD\$7,311,842.00, and occupied 6174 cuerdas of land.

## Ciales

### Demographics

<b>Demographic Characteristics</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000-2010</b>	<b>2010-2017</b>
Total Persons	19811	18782	17325	-5.2%	-7.8%
Population Density (population per sq. mile)	297	282.3	-	-4.9%	-
<b>Sex Distribution</b>					
<b>Sex Distribution</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000-2010</b>	<b>2010-2017</b>
Female Persons, percent	50.2	50.7	51.2	1.0%	1.0%



The population in Ciales is estimated to be around 17,325 in 2017. There has been some decline in the total number of residents, which decreased by 5.2 percent in the 2000-2010 period, and continued to decrease by 7.8 percent of its totality in the 2010-2017 period. The male to female ratio in the area has remained uniform in the past decades, and women represent 51.2 percent of the population as of 2017.

<b>Age Distribution</b>	<b>2000</b>	<b>2010</b>	<b>% Change</b>		
			<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Persons under 5 years, percent	8.2	6.3	5.7	-23.2%	-9.5%
Persons, 5 - 19	28.3	22.6	18.8	-20.1%	-16.8%
Persons, 20 - 64	53.3	57.6	58.0	8.1%	0.7%
Persons 65 years and over, percent	10.1	13.4	17.4	32.7%	29.9%
Median Age	29.8	35.9	40.5	20.5%	12.8%

Similar to the conditions in Adjuntas, the age distribution in Ciales has shifted towards an aging population. Children under the age of 5 have been declining as a percentage of the total population, from 8.2 percent in 2000 to only 5.7 percent in 2017. The proportion of youth aged 5-19 has also decreased, from 28.3 percent of the population in 2000, to 18.8 percent in 2017. On the other hand, groups aged 65 years and over now comprise 17.4 percent of the population, increasing from 10.1 percent only two decades prior. The largest group remains to be those aged 20-64, which represent 58 percent of Ciales' population. The median age is estimated to be 40.5 in 2017, which increased by 12.8 percent since 2010.

<b>Residence</b>	<b>2000</b>	<b>2010</b>	<b>% Change</b>		
			<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Urban, percent	72.6	61.6	-	-15.2%	-
Rural, percent	27.4	38.4	-	40.1%	-
<b>Household Characteristics</b>					
Total households	6047	6487	5949	7.3%	-8.3%
Average household size	3.27	2.89	-	-11.6%	-
<b>HH family type</b>					

Family	82.8	78.2	73.3	-5.6%	-6.3%
Non-family	17.2	21.8	26.7	26.7%	22.5%
Female HH no husband present	17.2	19.6	22.2	14.0%	13.3%
<b>Housing</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Total housing units	6886	7736	7335	12.3%	-5.2%
<b>Occupancy</b>					
Occupied	87.8	83.9	81.1	-4.4%	-3.3%
Vacant	12.2	16.1	18.9	32.0%	17.4%
<b>Tenure (Occupied HH)</b>					
Owner occupied	75.3	72.8	66.5	-3.3%	-8.7%
Renter Occupied	24.7	27.2	33.5	10.1%	23.2%
Median House value (owner occupied units)		95400	93400		-2.1%

By 2010, just over 60 percent of the population in Ciales lived in urban areas while the remaining 38.4 percent lived in rural areas. The latter saw a 40 percent increment from the percentage of the population identified as rural in 2000. In 2017, the municipio counts with 5,949 households, while averaging 2.89 people per household in 2010. Most of the population lives in family households, which amount to 73.3 percent of total households as of 2017. In addition, 22.2 percent of households are headed by women, with no husband present.

Total number of houses in Ciales are estimated to be 7,335, which decreased by 5.2 percent in the 2010-2017 period. There has been a steady increase in the number of vacant households, which now account for 18.9 percent of total households. There has been a decrease in households occupied by their owners, which accounted for 75.3 percent in 2000, and fell to 66.5 percent in 2017. Median house value has also decreased, from USD\$95,400 in 2010 to an estimated USD\$93,400 in 2017.

### Industry and Employment

Industry	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017

Agriculture, forestry, fishing and hunting, and mining	2.9	2.8	1.7	-3.4%	-39.3%
Construction	14.7	11.2	3.3	-23.8%	-70.5%
Manufacturing	20.8	16.4	14.2	-21.2%	-13.4%
Educational, health, social services	20.3	23.1	31.2	13.8%	35.1%
Arts, entertainment, recreation, accommodation, food services	3.3	4.3	1.6	30.3%	-62.8%
Retail trade	11.9	13.8	11.9	16.0%	-13.8%

The primary sector of the economy in Ciales has seen a slow decline in the past decade. Agriculture, forestry, fishing and hunting, and mining went from 2.8 percent to 1.7 percent as a proportion of overall industry between 2010 and 2017. The secondary sector also experienced deterioration, with the construction industry going from 11.2 to 3.3 percent of industry. Similarly, Manufacturing declined, although at a much lower rate going from 16.4 percent to 14.2 percent in 2017. Educational, health, and social services underwent major growth, representing 31.2 percent of industry proportion in the same year. Other activities within the tertiary sector such as retail, arts, entertainment, and food services remained relatively steady. The former comprised 11.9 percent of all industry employment, while the latter represented only 1.6 percent of the total.

<b>Income</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
per capita personal income	5634	6376	8049	13.2%	26.2%
Median HH income	10981	13564	14432	23.5%	6.4%

Per capita income in the area has been on the rise. In 2017, per capita personal income was estimated at USD\$8,049, a 26.2 percent increase from the 2010 estimate. Similarly, median household income increased by 6.4 percent in this period, totaling USD\$14,432 in the same year.

<b>Employment</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Total civilian labor force, percent of population age 16+ years	32.1	40.8	29.8	27.1%	-27.0%
Not in Labor Force	67.9	59.2	70.2	-12.8%	18.6%
Unemployment Rates	7.6	23.6	20.1	210.5%	-14.8%
<b>Gender of Labor force</b>					
In civilian labor force, female, percent of population age 16 years+	25.6	36.6	28.8	43.0%	-21.3%

In 2017, roughly 30 percent of the population in Ciales was part of the civilian labor force. This number declined by 27 percent in the 2010-2017 period. Resembling this pattern, the percentage of females aged over 16 who are part of the labor force declined by 21.3 percent in this time span, amounting to 28.8 percent of the civilian labor force. Unemployment rates are estimated at 20.1 percent.

### Social Assets and Vulnerabilities

	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
<b>Educational attainment</b>					
High school graduate or higher, percent of persons 25 years+	49.4	56.2	67.4	13.8%	19.9%
Bachelor's degree or higher, percent of persons age 25+ years	9.5	11.7	14.3	23.2%	22.2%
<b>Poverty and persistent poverty</b>					
Individuals below poverty level, percent	63.1	59	58.2	-6.5%	-1.4%
<b>Income maintenance and public assistance</b>					
specific pulic assistance programs (HH w/food stamps/SNAP in past 12 months)	-	49.1	55.1	-	12.2%
Gross rent as a percent of HH Income is 35 percent or more	-	39.1	29.6	-	-24.3%

Educational attainment in Ciales has experienced significant growth, with 67.4 percent of the population attaining a minimum of a high school degree, increasing by 19.9 percent since the last census. The percentage of the population attaining a bachelor's degree or higher also incremented, now comprising 14.3 percent of the population. Poverty levels have remained unchanged since 2010, with 58.2 percent of the population in the municipio living under the poverty line. As of 2017, 55.1 percent of the population qualified for specific public assistance programs, while 29.6 percent paid over 35 percent of the total household income in renting their homes.

## Agriculture

<b>Farms and production</b>	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>% Change</b>	
				<b>2002-2007</b>	<b>2007-2012</b>
Number of farms	553	541	365	-2.2%	-32.5%
land in farms (cuerdas)	15690	18447	11099	17.6%	-39.8%
<b>Land Use</b>					
Harvested (no. of farms)	530	417	301	-21.3%	-27.8%
Used for pasture or grazing (no. of farms)	92	119	78	29.3%	-34.5%
<b>By tenure of principal operators (no. of farms)</b>					
Full owners	475	466	307	-1.9%	-34.1%
Part owners	50	47	29	-6.0%	-38.3%
Tenants	28	28	29	0.0%	3.6%
<b>principal operator characteristics</b>					
hired farm workers (number)	567	1252	580	120.8%	-53.7%
agregados and sharecroppers	40	61	44	52.5%	-27.9%
<b>Principal operators by sex</b>					
Male	492	433	315	-12.0%	-27.3%
Female	61	80	9	31.1%	-88.8%
N/A	0	28	41	-	46.4%

The agricultural sector in Ciales, as discussed above, has been on decline on the past few decades. In 2012, the municipio counted with 365 farms, and a total 11,099 cuerdas of land. Most of the land is being used for harvesting, with 301 out of the total number being harvested for sale of the crops. The remaining 78 farms are mainly used for pasture or grazing. The proportion of operators who are full owners has decreased, as well as those who are part owners. However, principal operators who are tenants have remained steady in numbers, indicating that this group represents a larger proportion of principal operators than in previous years. The number of farms operated by both male and female farmers has decreased in number, due to the decline in agricultural production. However, there has been a sharper decline in the number of farms that are operated by female. Between 2007 and 2012, female operators went from 80 to 9. As of 2012, the percentage of total farms operated by women was 2.4 percent.

**% Change**

<b>Market value of agricultural products sold</b>	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>2002-2007</b>	<b>2007-2012</b>
Agricultural products sold (dollars)	\$4,187,139.00	\$5,163,835.00	\$3,830,377.00	23.3%	-25.8%
Crops sold (dollar)	\$3,594,624.00	\$4,347,571.00	\$3,319,181.00	20.9%	-23.7%
Coffee (dollars)	\$1,331,019.00	\$2,650,455.00	\$1,112,583.00	99.1%	-58.0%
<b>Income from farm-related sources</b>					
Income (dollars)	-	\$685,758.00	\$502,511.00	-	-26.7%
<b>Crops harvested for sale</b>					
Coffee harvested for sale (total coffee, qty harvested in cuerdas)	2116	2129	1379	0.6%	-35.2%

Market value of agricultural products sold in 2012 totaled USD\$3,830,377.00, a 25.8 decrease from the amount in 2007. Out of this amount, crops sold accounted for USD\$3,319,181.00. Other income from farm-related sources was estimated at \$502,511.00. The total amount of coffee harvested was 1379 cuerdas, valued at USD\$1,112,583.00.

## Jayuya

### Demographics

<b>Demographic Characteristics</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000-2010</b>	<b>2010-2017</b>
Total Persons	17318	16642	15297	-3.9%	-8.1%
Population Density (population per sq. mile)	388.4	373.7	-	-3.8%	-
<b>Sex Distribution</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
Female Persons, percent	49.7	50	49.5	0.6%	-1.0%

Jayuya has an estimated population of 15,297 habitants. Between 2000 and 2010, overall population decreased by 3.9 percent, and continued to decrease by 8.1 percent in the 2010-2017 period. In 2010, the municipio had a population density of 373.7 persons per square mile. Male/female ratio have remained unchanged in the past decades, as women constitute 49.5 percent of the total population.

<b>Age Distribution</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
Persons under 5 years, percent	8.6	6.9	5.7	-19.8%	-17.4%
Persons, 5 - 19	29	24.1	21.4	-16.9%	-11.2%
Persons, 20 - 64	53.6	57.7	58.2	7.6%	0.9%
Persons 65 years and over, percent	8.7	11.2	14.7	28.7%	31.3%
Median Age	28	33.1	36.3	18.2%	9.7%

The largest age group in the area are people aged 20-64, who represent just below 60 percent of the population. Children under 5 represent the smaller group, comprising merely 5.7 percent of the total. Younger groups have been in decrease since the 2000. People under 5 went from 8.6 to 5.7 percent, while persons 5-19 went from 29 percent to 21.4 percent of the total population. The median age in Jayuya is estimated to be 36.3 years old, a significant increase from the estimated 28 years old in the 2000s.

<b>Residence</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Urban, percent	65.8	67.9	-	3.2%	-
Rural, percent	34.2	32.1	-	-6.1%	-
<b>Household Characteristics</b>					
Total households	5083	5569	4818	9.6%	-13.5%
average household size	3.35	2.98	-	-11.0%	-
<b>HH family type</b>					
family	83.4	78.7	76.8	-5.6%	-2.4%
non-family	16.6	21.3	23.2	28.3%	8.9%
Female HH no husband present	17.9	20.9	26.3	16.8%	25.8%
<b>Housing</b>					
Total housing units	5591	6541	6189	-0.4%	-5.4%
<b>Occupancy</b>					
Occupied	90.9	85.1	77.8	-6.4%	-8.6%
Vacant	9.1	14.4	22.2	58.2%	54.2%
<b>Tenure (Occupied HH)</b>					
Owner occupied	70.5	68.5	62.7	-2.8%	-8.5%
Renter Occupied	29.5	31.5	37.3	6.8%	18.4%
Median House value (owner occupied units)		94400	90700		-3.9%

The number of households in Jayuya as of 2017 is 4,818, which declined by 13.5 percent since 2010. That same year, the municipio averaged 2.98 persons per household. In 2017, 76.6 percent of households were home to families, while the remaining 23.2 represented non-family households. Female households with no husband present represent 26.3 percent of all households. Between 2010 and 2017, this number increased by 25.8 percent.

The area counts with 6,189 housing units, which decreased by 5.4 percent in the 2010-2017 period. Vacancy rates have been on the rise since 2000. 22.2 percent of all households are vacant. On the other hand, tenure of occupied households has shifted, with significant increase on the percentage of renter-occupied versus owner occupied households. 37.3 percent of households are occupied by renters.

### Industry and Employment

Economic Characteristics	% Change				
	2000	2010	2017 (Estimate)	2000- 2010	2010- 2017
<b>Industry</b>					
Agriculture, forestry, fishing and hunting, and mining	7	8.9	3.6	27.1%	-59.6%
Construction	9.9	8.1	6.8	-18.2%	-16.0%
Manufacturing	29.3	21.2	28.7	-27.6%	35.4%
Educational, health, social services	20.5	25.2	24.6	22.9%	-2.4%
Arts, entertainment, recreation, accommodation, food services	4.1	4	7	-2.4%	75.0%
Retail trade	8.1	11.2	8.8	-95.6%	-21.4%

The distribution of industry in Jayuya has experienced a shift towards the secondary and tertiary sectors. There has been recent recovery of the manufacturing sector, which represents 28.7 percent of all industry work in this particular area. Educational, health and social services also account for a big proportion of the economy, amounting to 24.6 percent of total employment. Between 2010 and 2017, the primary sector has undergone significant deterioration, with agriculture, forestry, fishing and hunting, and mining being reduced over half



its share. Now, these activities represent only 3.6 percent of the industry. Construction has also decreased, although at a much lower rate, while arts, entertainment, recreation, accommodation and food services have increased slightly.

<b>Income</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
per capita personal income	5156	6976	7179	35.3%	2.9%
Median HH income	11220	15556	15615	38.6%	0.4%

Per capita income in Jayuya is now estimated at USD\$7,179, which has increased at a slow rate of 2.9 percent since 2010,. Median household income did not alter, increasing by less than 0.5 percent between 2010 and 2017.

<b>Employment</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Total civilian labor force, percent of population age 16+ years	37.4	50.3	36.1	34.5%	-28.2%
Not in Labor Force	62.6	49.7	63.9	-20.6%	28.6%
Unemployment Rates	11.6	26.9	27.1	131.9%	0.7%
<b>Gender of Labor force</b>					
In civilian labor force, female, percent of population age 16 years+	30.8	45.3	36.2	47.1%	-20.1%

Roughly 36 percent of the overall population over 16 years old are part of the civilian labor force. Unemployment rates are estimated to be around 27.1 percent. The percentage of females in the civilian labor force in 2017 is 36.2 percent, which declined from 45.3 percent in 2010.

### **Social Assets and Vulnerabilities**

<b>Educational attainment</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
High school graduate or higher, percent of persons 25 years+	52.4	63.7	80.4	21.6%	26.2%
Bachelor's degree or higher, percent of persons age 25+ years	10.9	16.6	23.3	52.3%	40.4%
<b>Poverty and persistent poverty</b>					

Individuals below poverty level, percent	62.8	54.5	60.3	-13.2%	10.6%
<b>Income maintenance and public assistance</b>					
Specific public assistance programs (HH w/food stamps/SNAP in past 12 months)		47.4	55.4	-	16.9%
Gross rent as a percent of HH Income is 35 percent or more		49.4	37.5	-	-24.1%

Just over 80 percent of the population over 25 years old in Jayuya had obtained a minimum of a high school degree in 2017, increasing from 63.7 percent in 2010. The percentage of people with a bachelor's degree or higher also increased, from 16.6 percent to 23.3 percent. Poverty levels, however, have been on the rise, as 60.3 percent of the population lives in conditions of poverty. In addition, 55.4 percent receive public assistance, while 37.5 percent pay more than 35 percent of their household income in rent payments.

### Agriculture

	2002	2007	2012	% Change	
				2002-2007	2007-2012
<b>Farms and production</b>					
Number of farms	717	401	314	-44.1%	-21.7%
land in farms (cuerdas)	15487	10885	7665	-29.7%	-29.6%
<b>Land Use</b>					
Harvested (no. of farms)	687	394	308	-42.6%	-21.8%
Used for pasture or grazing (no. of farms)	61	44	26	-27.9%	-40.9%
<b>By tenure of principal operators (no. of farms)</b>					
Full owners	666	336	294	-49.5%	-12.5%
Part owners	41	54	5	31.7%	-90.7%
Tenants	10	11	15	10.0%	36.4%
<b>principal operator characteristics</b>					
hired farm workers (number)	1226	1216	702	-0.8%	-42.3%
agregados and sharecroppers	92	110	42	19.6%	-61.8%
<b>Principal operators by sex</b>					
Male	614	320	280	-47.9%	-12.5%
Female	103	51	14	-50.5%	-72.5%
N/A	0	30	20		-33.3%

314 farms are located in the Jayuya municipio, with a total amount of 7,665 cuerdas of land. From the total amount of farms, 308 are used for harvesting while the remaining are used for pasture or grazing.

Tenure of principal operators has changed significantly, with a higher proportion of tenants than in the past few decades. Part ownership practices have declined sharply, representing less than 2 percent of all tenure types. As a result of declining productivity in the agriculture sector, the number of hired farmworkers, agregados, and sharecroppers have fell in recent years. Between 2007 and 2012, the total number of hired farm workers declined by 42.3 percent, while the number of agregados and sharecroppers fell by 61.8 percent. In addition, the sex distribution of principal operators has varied. Male principal operators constitute almost 90 percent of all farm operators, while women represent less than 5 percent of this proportion. As all agricultural production declines, women in Jayuya have less participation in farm operations and in the economic activity resulting from it.

<b>Market value of agricultural products sold</b>	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>2002- 2007</b>	<b>2007- 2012</b>
Agricultural products sold (dollars)	\$6,213,998	\$5,446,174	\$3,496,456	-12.4%	-35.8%
Crops sold (dollar)	\$5,267,575	\$5,252,517	\$3,441,559	-0.3%	-34.5%
Coffee (dollars)	\$3,614,548	\$3,879,734	\$2,308,975	7.3%	-40.5%
<b>Income from farm-related sources</b>					
Income (dollars)	-	\$624,163.00	\$411,899.00	-	-34.0%
<b>Crops harvested for sale</b>					
Coffee harvested for sale (total coffee, qty harvested in cuerdas)	4496	3291	2168	-26.8%	-34.1%

Market value of agricultural products sold in Jayuya total USD\$3,496,456. This number has seen a 35.8 percent decline from previous value in 2007. The total amount of revenue from crop sales in the same year was valued at USD\$3,441,559.00, of which USD\$2,308,975.00 were collected from sales of 2168 cuerdas of coffee. Other income from farm related sources totaled \$411,899.00.

**Lares****Demographics**

<b>Demographic Characteristics</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
Total Persons	34415	30753	27321	-10.6%	-11.2%
Population Density (population per sq. mile)	559.9	500	-	-10.7%	-
<b>Sex Distribution</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
Female Persons, percent	50.9	50.8	50.7	-0.2%	-0.2%

The municipio of Lares has an estimated population of 27,321 inhabitants, which declined by 11.2 percent in the 2010-2017 period. Sex distribution has remained unaltered, with 50.7 percent of the population identifying as female.

<b>Age Distribution</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
Persons under 5 years, percent	7.6	5.6	5	-26.3%	-10.7%
Persons, 5 - 19	26.3	21.4	18.2	-18.6%	-15.0%
Persons, 20 - 64	54.8	58.2	58.2	6.2%	0.0%
Persons 65 years and over, percent	11.3	14.7	18.4	30.1%	25.2%
Median Age	31.7	37.2	41.1	17.4%	10.5%

The median age in 2017 was estimated at 41.1 years old, which has increased almost by ten years since the 2000s. The groups aged 0 to 19 have seen the greatest decline in this period. Children under 5 declined from 7.6 to 5 percent between 2000 and 2017. Similarly, the share of the population aged 5 to 19 decreased from 26.3 percent to 18.2 percent. The majority of the population, 58.2 percent are people aged 20 to 64. Since 2000, the percentage of the population older than 65 years has increased by 7.1 percent, and add up to 18.4 percent of the total in 2017.

<b>Residence</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Urban, percent	75.6	74.3	-	-1.7%	-
Rural, percent	24.4	25.7	-	5.3%	-
<b>Household Characteristics</b>					
Total households	10974	11154	10051	1.6%	-9.9%
average household size	3.12	2.74	-	-12.2%	-
<b>HH family type</b>					
family	83.4	76.4	74.1	-8.4%	-3.0%
non-family	16.6	23.6	25.9	42.2%	9.7%
Female HH no husband present	17	18.1	18.7	6.5%	3.3%
<b>Housing</b>					
Total housing units	12060	12956	12228	7.4%	-5.6%
<b>Occupancy</b>					
Occupied	91	86.1	82.2	-5.4%	-4.5%
Vacant	9	13.9	17.8	54.4%	28.1%
<b>Tenure (Occupied HH)</b>					
Owner occupied	73.3	68.6	56.4	-6.4%	-17.8%
Renter Occupied	26.7	31.4	43.6	17.6%	38.9%
Median House value (owner occupied units)	-	92800	86400	-	-6.9%

In the last decade, the rural/urban distribution of Lares' population has not varied. 25.7 percent of the population lives in rural areas. The municipio has 10,0051 households, which have decreased by 9.9 percent since 2010. In 2010, an average of 2.74 people lived in each household. Seventy four percent of the total consist of family households, while the remaining 25.9 percent are non-family households. 18.7 percent of households are owned by women, with no husband present.

There are 12,228 housing units in the area, decreasing at a lower rate than households, at 5.6 percent since 2010. The proportion of vacant households is now almost double than in the 2000s, which increased from 9 to 17.8 percent of all housing units. In addition, renter occupied homes have also increased, from 26.7 of occupied households in 2000, to 43.6 percent in 2017. The median house value decreased by 6.9 percent between 2010 and 2017, going from USD\$92,800 to USD\$86,400.

## Industry and Employment

Industry	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Agriculture, forestry, fishing and hunting, and mining	12.5	9	7	-28.0%	-22.2%
Construction	7.5	9.2	4.5	22.7%	-51.1%
Manufacturing	13.9	8.1	9.4	-41.7%	16.0%
Educational, health, social services	22.3	24.3	29.1	9.0%	19.8%
Arts, entertainment, recreation, acommodation, food services	5.1	4.3	5.2	-15.7%	20.9%
Retail trade	9.7	15	11	54.6%	-26.7%

The economy of Lares is increasingly geared towards the tertiary sector, with educational and social services representing 29.1 percent of the economy. Retail trade is the second largest activity, representing 11 percent of all industry employment. The primary and secondary sectors have experienced significant decay in the past decades. Agriculture, forestry, fishing and hunting, and mining represented 7 percent of the economy in 2017, down from 12.5 percent in the 2000s. Construction and manufacturing have also declined in this period, by 3.0 percent and 4.5 percent respectively.

Income	2000	2010	2017 (Estimate)	2000- 2010	2010- 2017
Per capita personal income	4634	6775	8212	46.2%	21.2%
Median HH income	9685	12199	12820	26.0%	5.1%

Per capita personal income in Lares has increased steadily, from USD\$4,634 in 2000, to an estimated USD\$8,212 in 2017. Median household income has also experienced growth, although at a lower rate. In 2000, it was USD\$9,685, and it's now estimated at USD\$12,820.

Employment	2000	2010	2017 (Estimate)	2000- 2010	2010- 2017
Total civilian labor force, percent of population age 16+ years	36	42.2	42.4	17.2%	0.5%
Not in Labor Force	64	57.8	57.6	-9.7%	-0.3%
Unemployment Rates	7.3	25	27.1	242.5%	8.4%

**Gender of Labor force**

In civilian labor force, female, percent of population age 16 years+	26.8	34	37.4	26.9%	10.0%
--	------	----	------	-------	-------

Fourty two percent of Lares population are part of the civilian labor force.

Unemployment rates in the area have been on the rise, just above 27 percent. Female representation in the labor force has also been expanding, as women now constitute 37.4 percent of the civilian labor force.

**Social Assets and Vulnerabilities**

<b>Educational attainment</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
High school graduate or higher, percent of persons 25 years+	44.1	56	60.8	27.0%	8.6%
Bachelor's degree or higher, percent of persons age 25+ years	12.7	14.5	17.6	14.2%	21.4%
<b>Poverty and persistent poverty</b>					
Individuals below poverty level, percent	65.5	59.9	56.4	-8.5%	-5.8%
<b>Income maintenance and public assistance</b>					
Specific pulic assistance programs (HH w/food stamps/SNAP in past 12 months)	-	50.2	52	-	3.6%
Gross rent as a percent of HH Income is 35 percent or more	-	60.1	35.3	-	-41.3%

Educational attainment in Lares has improved in the past decades. Almost 61 percent of the population aged over 25 holds a high school degree, up from 56 percent in 2010. The proportion of this population who holds a bachelor's degree or higher increased from 14.5 percent in 2010, to 17.6 percent in 2017. Other social indicators have also ameliorated, including poverty levels, although less significantly. The percent of individuals living under conditions of poverty decreased from 59.9 percent to 56.4 in the same timeframe. Despite these improvements, 52 percent of the population qualifies for specific public assistant programs, while 35.3 percent pay more than one third of their income in home rental.

## Agriculture

<b>Farms and production</b>	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>% Change</b>	
				<b>2002-2007</b>	<b>2007-2012</b>
Number of farms	1209	796	691	-34.2%	-13.2%
Land in farms (cuerdas)	19432	16112	16218	-17.1%	0.7%
<b>Land use</b>					
Harvested (no. Of farms)	1187	753	672	-36.6%	-10.8%
Used for pasture or grazing (no. Of farms)	53	58	47	9.4%	-19.0%
<b>By tenure of principal operators (no. Of farms)</b>					
Full owners	1086	686	600	-36.8%	-12.5%
Part owners	79	71	44	-10.1%	-38.0%
Tenants	44	39	47	-11.4%	20.5%
<b>Principal operator characteristics</b>					
Hired farm workers (number)	1392	1610	1587	15.7%	-1.4%
Agregados and sharecroppers	121	140	121	15.7%	-13.6%
<b>Principal operators by sex</b>					
Male	1086	667	630	-38.6%	-5.5%
Female	123	85	52	-30.9%	-38.8%
N/A	0	44	9	-	-79.5%

The number of farms in the area declined by 42.8 percent between 2002 and 2012, now amounting to 691 farms and a total 16,218 cuerdas of land. 672 of these farms are used for harvesting, while 47 are used for grazing and pasture. The proportion of principal operators who are full owners of farms has remained unvaried, while the proportion of tenants has almost doubled. Less farms are operated by part owners. The number of hired farm workers has somewhat declined, although agregados and sharecroppers have had greater impact of the agricultural decline in the municipio. Women, however, have experienced the greatest shift. In 2002, female principal operators represented merely 10.1 percent of all operators. By 2017, they represented only 7.5 of this group.

<b>Market value of agricultural products sold</b>	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>2002-2007</b>	<b>2007-2012</b>
Agricultural products sold (dollars)	\$11,777,715	\$11,755,225	\$12,682,415	-0.2%	7.9%
Crops sold (dollar)	\$10,343,524	\$10,513,607	\$11,776,009	1.6%	12.0%
Coffee (dollars)	\$5,110,490	\$4,341,828	\$3,468,625	-15.0%	-20.1%



<b>Income from farm-related sources</b>					
Income (dollars)	-	\$1,077,143	\$1,654,243	-	53.6%
<b>Crops harvested for sale</b>					
Coffee harvested for sale (total coffee, qty harvested in cuerdas)	6970	4478	3652	-35.8%	-18.4%

The sale of agricultural products in Lares increased by 7.9 percent between 2007 and 2017, totaling USD\$12,682,415, of which USD\$11,776,009 represented revenue from crops. Other farm-related sources income amounted to USD\$1,654,243, a 53.6 increase from the value of 2007 crops sales. The harvest and sale of coffee crops reached USD\$3,468,625, collected from 3652 cuerdas of land.

## Las Marias

### Demographics

<b>Demographic Characteristics</b>	<b>Census</b>	<b>Census</b>	<b>ACS</b>	<b>% Change</b>	
	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Total Persons	11061	9881	8874	-10.7%	-10.2%
Population Density (population per sq. mile)	238.7	213.1		-10.7%	-
<b>Sex Distribution</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
Female Persons, percent	51	50.7	50.8	-0.6%	0.2%

Las Marias has a population of 8,874 inhabitants, 10.2 percent less than in 2010. As of 2010, population density was estimated at 213.1 persons per square mile. Roughly 51 percent of the population is female.

<b>Age Distribution</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
Persons under 5 years, percent	7.5	6.5	5.8	-13.3%	-10.8%
Persons, 5 - 19	26.1	21.3	18.8	-18.4%	-11.7%
Persons, 20 - 64	56.7	58.4	57.4	3.0%	-1.7%

Persons 65 years and over, percent	9.7	13.7	18.2	41.2%	32.8%
Median Age	30.8	36.3	40.1	17.9%	10.5%

The largest age group in the municipio are people aged 20-64 who represent 57.4 of the population. The second largest are those aged 5-19, who despite being a large proportion of the population, have been on decline since the 2000s. In 2000, this group represented 26.1 percent of the population, and now they equal 18.8 percent. In contrast, people aged 65 of older have increased from 9.7 percent to 18.2 percent of the population in the same period. The median age is 40.1 years old.

<b>Residence</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000-2010</b>	<b>2010- 2017</b>
Urban, percent	34.5	33.7	-	-2.3%	-
Rural, percent	65.5	66.3	-	1.2%	-
<b>Household characteristics</b>					
Total households	3564	3561	3033	-0.1%	-14.8%
Average household size	3.09	2.75	-	-11.0%	-
<b>HH family type</b>					
Family	81.8	77.1	72.4	-5.7%	-6.1%
Non-family	18.2	22.9	27.6	25.8%	20.5%
Female HH no husband present	17.4	17.7	16	1.7%	-9.6%
<b>Housing</b>					
Total housing units	4124	3987	3919	-3.3%	-1.7%
<b>Occupancy</b>					
Occupied	86.4	89.3	77.4	3.4%	-13.3%
Vacant	13.6	10.7	22.6	-21.3%	111.2%
<b>Tenure (occupied hh)</b>					
Owner occupied	71.2	69.1	69.4	-2.9%	0.4%
Renter occupied	28.8	30.9	30.6	7.3%	-1.0%
Median House value (owner occupied units)		83000	73100		-11.9%

A significant portion of Las Marias' population, 66.3 percent, resides in rural areas. The municipio is home to 3,033 households, a 14.8 decline from the 2010 digits. Average household size was estimated at 2.75 persons per household in 2010. 72 percent of households are formed

by families, while the remaining 27.6 percent belong to non-families. 16 percent of households are owned by women, with no husband present.

The municipio also holds 3,919 housing units, only 1.7 less than in 2010. Nevertheless, vacant households have increased from 10.7 percent to 22.6 percent of all housing units. For occupied households, rentals represent 30.6 percent, which has remained steady in the past decade. Median house values decreased by 11.9 percent between 2010 and 2017, falling from USD\$83,000 to USD\$73,100.

### Industry and Employment

Industry	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Agriculture, forestry, fishing and hunting, and mining	15.2	7.8	5.2	-48.7%	-33.3%
Construction	12.1	15	4.3	24.0%	-71.3%
Manufacturing	17.7	18	8.6	1.7%	-52.2%
Educational, health, social services	18.9	27.4	28.3	45.0%	3.3%
Arts, entertainment, recreation, acommodation, food services	3	3.2	9.9	6.7%	209.4%
Retail trade	5.6	5.5	13.7	-1.8%	149.1%

Las Marias' economy has experienced a shift away from the primary sector of the economy. Agriculture, forestry, fishing and hunting, and mining declined by 10 percent since 2000, now equating 5.2 percent of the municipio's economic activities. Construction and Manufacturing also declined, by 7.8 and 9.1 percent respectively. Educational, health, and social services have experienced significant growth, increasing from 18.9 percent in 2000, to 28.3 percent in 2017. Similarly, arts, entertainment, recreation, accommodation and food services increased their proportion by more than 200% between 2010 and 2017, and now represent 9.9 percent of the economy. Retail trade almost doubled in this period, going from 5.5 to 13.7 percent of all industry employment.

<b>Income</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000-2010</b>	<b>2010-2017</b>
per capita personal income	5066	6417	7154	26.7%	11.5%
Median HH income	9472	13847	14404	46.2%	4.0%

Personal income increased by 11.5 percent since 2010, totaling USD\$7,154 in 2017. In addition, median household income increased by 4 percent in this timeframe, reaching the total sum of USD\$14,404.

<b>Employment</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000-2010</b>	<b>2010-2017</b>
Total civilian labor force, percent of population age 16+ years	40.6	42.1	33	3.7%	-21.6%
Not in Labor Force	59.4	57.9	67	-2.5%	15.7%
Unemployment Rates	12.3	9.1	2.4	-26.0%	-73.6%
<b>Gender of Labor force</b>					
In civilian labor force, female, percent of population age 16 years+	30.6	33.6	26.2	9.8%	-22.0%

One third of the working age population in Las Marias is part of the civilian labor force. However, unemployment rate is 2.4 percent, and has decreased sharply since 2000. Since 2010, the percent of the population in the civilian labor force who are female decreased by 22.0 percent from the last estimate, as they now constitute only 26.2 percent of this group.

### Social Assets and Vulnerabilities

<b>Educational attainment</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000-2010</b>	<b>2010-2017</b>
High school graduate or higher, percent of persons 25 years+	41.7	49.3	55.6	18.2%	12.8%
Bachelor's degree or higher, percent of persons age 25+ years	9.6	12.3	15	28.1%	22.0%
<b>Poverty and persistent poverty</b>					
Individuals below poverty level, percent	65.5	59.5	57.6	-9.2%	-3.2%
<b>Income maintenance and public assistance</b>					
Specific pulic assistance programs (HH w/food stamps/SNAP in past 12 months)	-	44.8	51.1	-	14.1%

Gross rent as a percent of HH Income is 35 percent or more - 52.6 69.1 - 31.4%

More than half of the population in Las Marias has attained a minimum of a high school degree (55.6 percent). Moreover, 15 percent have now attained a bachelor's degree or higher. Both indicators have been increasing since 2010, the former by 6.3 percent and the latter by 2.7 percent.

Poverty levels have decreased over time in the municipio. In 2000, the percentage of the population living under the poverty line was 65.5 percent. By 2017, this number had fell to 57.6 percent of the population. In the same year, 51.1 percent of the population qualified for public assistance from the government, while 69.1 percent spent more than 35 percent of their income in house rent.

### Agriculture

	2002	2007	2012	% Change	
				2002-2007	2007-2012
<b>Farms and production</b>					
Number of farms	693	404	299	-41.7%	-26.0%
Land in farms (cuerdas)	12149	7734	7347	-36.3%	-5.0%
<b>Land use</b>					
Harvested (no. Of farms)	680	367	286	-46.0%	-22.1%
Used for pasture or grazing (no. Of farms)	32	55	29	71.9%	-47.3%
<b>By tenure of principal operators (no. Of farms)</b>					
Full owners	631	342	270	-45.8%	-21.1%
Part owners	79	48	13	-39.2%	-72.9%
Tenants	44	14	16	-68.2%	14.3%
<b>Principal operator characteristics</b>					
Hired farm workers (number)	915	782	617	-14.5%	-21.1%
Agregados and sharecroppers	36	96	86	166.7%	-10.4%
<b>Principal operators by sex</b>					
Male	625	318	270	-49.1%	-15.1%
Female	68	44	14	-35.3%	-68.2%
N/a	0	42	15	-	-64.3%

Between 2007 and 2012, the number of farms declined by 26 percent, totaling 299 farms by the end of this period. Total number of land decreased by 5 percent, amounting to 7,347 cuerdas of lands. 286 of these farms are used for harvesting, while only 29 are used for other purposes such as pasture and grazing.

Full owners represent the majority of farm operators, representing 90 percent of this group. The proportion of part owners who operate the farms decreased between 2007 and 2012, declining from 11 percent to roughly 4 percent of principal operators. The proportion of tenants increased, going from 3 percent to 5 percent in the same timeframe. The number of hired farm workers declined by 21.1 percent, while agregados and sharecroppers decreased by 10.4 percent. Males operate approximately 90 percent of all farms, while women operate only 4.6% percent of this total.

<b>Market value of agricultural products sold</b>	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>2002- 2007</b>	<b>2007- 2012</b>
Agricultural products sold (dollars)	\$5,855,555	\$4,395,117	\$3,925,697	-24.9%	-10.7%
Crops sold (dollar)	\$5,659,677	\$3,986,445	\$3,633,244	-29.6%	-8.9%
Coffee (dollars)	\$2,460,933	\$2,272,310	\$1,411,755	-7.7%	-37.9%
<b>Income from farm-related sources</b>					
Income (dollars)	-	\$330,025	\$750,521	-	127.4%
<b>Crops harvested for sale</b>					
Coffee harvested for sale (total coffee, qty harvested in cwt)	3284	2204	1512	-32.9%	-31.4%

The value of agricultural products sold declined by 10.7 percent between 2007 and 2012, totaling USD\$3,925,697 in 2012. Crop sold accounted for USD\$3,633,244 while income from other farm related sources amounted to USD\$750,521. Coffee crops resulted in USD\$1,411,755, collected from the sale of 1,512 cuerdas of land.

**Maricao****Demographics**

<b>Demographic Characteristics</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2002-2007</b>	<b>2007-2012</b>
Total Persons	6449	6276	6180	-2.7%	-1.5%
Population Density (population per sq. mile)	176.1	171.4	-	-2.7%	-

<b>Sex Distribution</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2002-2007</b>	<b>2007-2012</b>
Female Persons, percent	50.9	50.6	50.3	-0.6%	-0.6%

The population of Maricao is 6,180 inhabitants in 2017. This number declined by 1.5 percent since 2010, from 6,276 people. Population density was last estimated at 171.4 persons per square mile. Male/Female ratios have remained unchanged since the beginning of the century, with 50.3 of the population identifying as female by 2017.

<b>Age Distribution</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2002-2007</b>	<b>2007-2012</b>
Persons under 5 years, percent	8.2	6.7	5	-18.3%	-25.4%
Persons, 5 - 19	28.1	21.1	18.9	-24.9%	-10.4%
Persons, 20 - 64	54.5	59.5	58.8	9.2%	-1.2%
Persons 65 years and over, percent	9.4	12.8	17.3	36.2%	35.2%
Median Age	29.1	36.2	42.7	24.4%	18.0%

The median age in Maricao was estimated at 42.7 years old in 2017, up from 36.2 years old in 2010. Children under 5 decreased by 3.2 percent since 2000, now representing 5 of the population. Similarly, groups aged 5-19 declined sharply, from 28.1 percent of the population in 2000, to 18.9 percent in 2017. People aged 20-64 represent the majority of the municipio's

population, 58.8 percent of the total. In the past decades, the proportion of people over 65 years old have increased, now 17.3 percent of the total population.

<b>Residence</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2002-2007</b>	<b>2007- 2012</b>
Urban, percent	42.6	43	-	0.9%	-
Rural, percent	57.4	57	-	-0.7%	-
<b>Household Characteristics</b>					
Total households	2013	2289	1914	13.7%	-16.4%
average household size	3.2	2.74	-	-14.4%	-
<b>HH family type</b>					
family	81.6	74.5	71.8	-8.7%	-3.6%
non-family	18.4	25.5	28.2	38.6%	10.6%
Female HH no husband present	18.2	18.7	19.6	2.7%	4.8%
<b>Housing</b>					
Total housing units	2272	2740	2623	20.6%	-4.3%
<b>Occupancy</b>					
Occupied	88.6	83.5	73	-5.8%	-12.6%
Vacant	11.4	16.5	27	44.7%	63.6%
<b>Tenure (Occupied HH)</b>					
Owner occupied	72.8	72.5	73.9	-0.4%	1.9%
Renter Occupied	27.2	27.5	26.1	1.1%	-5.1%
Median House value (owner occupied units)	-	83900	92900	-	10.7%

The rural/urban ratio in Maricao has remained steady, with 57 percent of the population living in rural settings in 2010. Total number of households decreased by 16.4 percent, from 2289 in 2010 to 1914 in 2017. Average household size in 2010 was estimated at 2.7 persons per household. Family households represent the majority of the total, at 71.8 percent, while the remaining 28.2 percent represent non-family households. Nineteen percent of all households are headed by women, with no husband present.

Housing units declined by 4.3 percent in the 2010-2017 period, from 2,740 in 2010, to 2,623 in 2017. By 2017, vacant households amounted to 27 percent of total households, 10.5 percent more than 7 years prior. Owner/Renter occupied household ratio has remained unvaried,



with roughly 74 percent of households occupied by their owners. Median household value increased by 10.7 percent between 2010 and 2017, from USD\$83,900 to USD\$92,200.

### Industry and Employment

Industry	2000	2010	2017 (Estimate)	% Change	
				2002-2007	2007-2012
Agriculture, forestry, fishing and hunting, and mining	15	9.6	20.6	-36.0%	114.6%
Construction	10.1	8.7	6.9	-13.9%	-20.7%
Manufacturing	19.6	19.8	15.6	1.0%	-21.2%
Educational, health, social services	17.3	27.1	19.5	56.6%	-28.0%
Arts, entertainment, recreation, accommodation, food services	5.5	8.9	6.7	61.8%	-24.7%
Retail trade	5.2	1	8	-80.8%	700.0%

Maricao's economy is based on primary industry activity, with an estimated 20.6 percent of the population employed in the areas of agriculture, forestry, fishing and hunting, and mining in 2017, up from 9.6 percent of all employment in 2010. Educational, health, and social services is the second largest activity, representing 19.5 percent of the total. Manufacturing is the third largest, employing 15.6 percent of the civilian labor force. Retail, construction, and services represent 8, 6.9 and 6.7 percent of the population, respectively.

Income	2000	2010	2017 (Estimate)	2002-2007	2007-2012
per capita personal income	5224	5327	5943	2.0%	11.6%
Median HH income	9243	10932	13462	18.3%	23.1%

Personal income in Maricao averages USD\$5,943 per capita, an 11.6 percent increase since 2010. Median Household income also rose 23.1 percent during this period, from USD\$10,932 in 2010, to USD\$13,462 in 2017.

Employment	2000	2010	2017 (Estimate)	2002-2007	2007-2012
Total civilian labor force, percent of population age 16+ years	37.8	42.5	33.4	12.4%	-21.4%
Not in Labor Force	62.2	57.5	66.6	-7.6%	15.8%

Unemployment Rates	10.9	8.6	12.1	-21.1%	40.7%
<b>Gender of Labor force</b>					
In civilian labor force, female, percent of population age 16 years+	27.4	32.2	23.5	17.5%	-27.0%

Approximately one third of Maricao's population is part of the civilian labor force, with an unemployment rate of 12.1 percent in 2017. Female workers represent less than one fourth of this population, with only 23.5 percent of women participating in the labor force.

### Social Assets and Vulnerabilities

Educational attainment	2000	2010	2017 (Estimate)	% Change	
				2002- 2007	2007- 2012
High school graduate or higher, percent of persons 25 years+	39.4	54.3	50.2	37.8%	-7.6%
Bachelor's degree or higher, percent of persons age 25+ years	6.1	11.3	10.2	85.2%	-9.7%
<b>Poverty and persistent poverty</b>					
Individuals below poverty level, percent	68	64.7	65	-4.9%	0.5%
<b>Income maintenance and public assistance</b>					
Specific public assistance programs (HH w/food stamps/SNAP in past 12 months)	-	53.1	53	-	-0.2%
Gross rent as a percent of HH Income is 35 percent or more	-	42	58.5	-	39.3%

Half of the municipio's population has attained a minimum of a high school degree, down from 54.3 percent of the population in 2010. Those who hold a bachelor's degree or higher represent 10.2 percent of the population, down from 11.3 percent in 2010. Poverty levels have remained steady, with 65 percent of the population living below the poverty level. 53 percent of the population qualifies for public assistance, while 58.5 percent pay over one third of their household income in rent.

### Agriculture

% Change

	2002	2007	2012	2002- 2007	2007- 2012
<b>Farms and production</b>					
Number of farms	439	301	252	-31.4%	-16.3%
land in farms (cuerdas)	9911	8442	6111	-14.8%	-27.6%
<b>Land Use</b>					
Harvested (no. of farms)	432	295	249	-31.7%	-15.6%
Used for pasture or grazing (no. of farms)	10	19	12	90.0%	-36.8%
<b>By tenure of principal operators (no. of farms)</b>					
Full owners	409	264	236	-35.5%	-10.6%
Part owners	22	34	5	54.5%	-85.3%
Tenants	8	3	11	-62.5%	266.7%
<b>principal operator characteristics</b>					
hired farm workers (number)	1188	1201	696	1.1%	-42.0%
agregados and sharecroppers	89	112	78	25.8%	-30.4%
<b>Principal operators by sex</b>					
Male	397	254	220	-36.0%	-13.4%
Female	42	34	8	-19.0%	-76.5%
N/A	0	13	24	-	84.6%

The number of farms and land for agricultural production have been on decline in the past decade. In 2007, Maricao counted with 301 farms, and 8,442 cuerdas of land. By 2012, these numbers had dropped to 252 and 6,111 respectively. Two hundred and forty nine farms are used for harvesting while 12 are used for pasture or grazing. 2 percent of farm operators are part owners, while approximately 4.3 percent are tenants. The majority of principal operators are full owners. Hired farm workers and agregados and sharecroppers have declined since 2007, by 42 and 30 percent respectively. Women operate merely 3.1 percent of all farms, while men operate 87 percent of this total.

	2002	2007	2012	2002- 2007	2007- 2012
<b>Market value of agricultural products sold</b>					
Agricultural products sold (dollars)	\$4,696,019	\$5,347,515	(D)	13.9%	-
Crops sold (dollar)	\$4,648,545	\$5,345,394	(D)	15.0%	-
Coffee (dollars)	\$3,178,018	\$4,039,671	\$1,743,125	27.1%	-56.8%
<b>Income from farm-related sources</b>					
Income (dollars)	-	\$581,914	\$577,104	-	-0.8%
<b>Crops harvested for sale</b>					
Coffee harvested for sale (total coffee, qty harvested in cuerdas)	3927	3029	1666	-22.9%	-45.0%

In 2007, the market value of agricultural products sold in Maricao amounted to USD\$5,347,515, and crops sold were valued at USD\$5,325,394. While the total value of all products and crops is not available for 2012, coffee crops saw a 56.8 percent decline between 2007 and 2012. In 2012, revenue from coffee was estimated at USD\$1,743,125 resulting from 1666 cuerdas of harvest. Income from other farm related sources did not vary within this period, amounting to USD\$577,104 in 2012.

## Orocovis

### Demographics

Variable	Census	Census	ACS	% Change	
	2000	2010	2017 (Estimate)	2000- 2010	2010- 2017
<b>Demographic Characteristics</b>					
Total Persons	23844	23423	21906	-1.8%	-6.5%
Population Density (population per sq. mile)	375.6	368.2	-	-2.0%	-
				% Change	
<b>Sex Distribution</b>					
Female Persons, percent	49.6	49.6	49.8	0.0%	0.4%

The population in Orocovis is 21,906 habitants, 6.5 percent decline from 2010 digits. When last estimated, population density was 368.2 persons per square mile. 49.8 percent of the population identifies as female.

Age Distribution	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Persons under 5 years, percent	8.9	6.2	5.7	-30.3%	-8.1%
Persons, 5 - 19	28.8	24.4	20.4	-15.3%	-16.4%
Persons, 20 - 64	52.8	57.8	59.1	9.5%	2.2%
Persons 65 years and over, percent	9.5	11.6	14.9	22.1%	28.4%
Median Age	28.6	34.6	37.9	21.0%	9.5%

The age distribution in Orocovis has varied in the past decades. In the 2000s, younger groups represented a higher proportion of the population. Those aged under 5, comprised 8.9 of

all people, while groups aged 5-19 represented 28.8 of the total. By 2017, these two groups had declined their proportions, to 5.7 percent and 20.4 percent respectively. Older groups, specifically those over the age of 65, increased in proportion, and now represent 14.9 of the population, more than 50 percent over the proportion it constituted in 2000. The median age in the municipio is 37.9 years old.

<b>Residence</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010-2017</b>
Urban, percent	72.8	64.1	-	-12.0%	-
Rural, percent	27.2	35.9	-	32.0%	-
<b>Household Characteristics</b>					
Total households	7083	7812	6797	10.3%	-13.0%
average household size	3.35	2.98		-11.0%	-100.0%
<b>HH family type</b>					
family	85.4	80.2	75.8	-6.1%	-5.5%
non-family	14.6	19.8	24.2	35.6%	22.2%
Female HH no husband present	16.2	18.8	26.6	16.0%	41.5%
<b>Housing</b>					
Total housing units	7946	9255	8528	16.5%	-7.9%
<b>Occupancy</b>					
Occupied	89.1	84.4	79.7	-5.3%	-5.6%
Vacant	10.9	15.6	20.3	43.1%	30.1%
<b>Tenure (Occupied HH)</b>					
Owner occupied	78	74.5	68.7	-4.5%	-7.8%
Renter Occupied	22	25.5	31.3	15.9%	22.7%
Median House value (owner occupied units)	-	84900	89300	-	5.2%

Sixty four percent of the population in Orocovis live in urban areas. Between 2000 and 2010, the proportion of people living in rural areas increased by 32 percent, reaching 35.9 percent of the population by 2010. Total households have declined in recent years, from 7,812 households in 2010, to 6,797 in 2017. Average household size in 2010 was estimated at 2.98 persons per households. Family households account for the majority of all household types, although they decreased by 5.5 percent in the 2010-2017, amounting to 75.8 percent of the total.

Housing units also declined between 2010 and 2010, by 7.9 percent of the total amount. In 2017, Orocovis is home to 8,528 housing units. Vacancy rates have increased significantly, from 10.9 percent in 2000. To just over 20 percent in 2017. In addition, the proportion of houses occupied by renters has increased, from 25.5 percent of all occupied households in 2010, to 31.3 percent in 2017. In this period, median house value increased by 5.2 percent, from USD\$84,900 to USD\$89,300.

### Industry and Employment

Industry	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Agriculture, forestry, fishing and hunting, and mining	9.3	5.4	2.2	-41.9%	-59.3%
Construction	12.7	14.6	11.6	15.0%	-20.5%
Manufacturing	15.7	13.6	14.2	-13.4%	4.4%
Educational, health, social services	21.2	28.3	23.8	33.5%	-15.9%
Arts, entertainment, recreation, accommodation, food services	3.2	7.2	8.1	125.0%	12.5%
Retail trade	13.6	10	13.1	-26.5%	31.0%

The primary sector has experienced significant deterioration in the past few decades. In 2000, agriculture, forestry, fishing and hunting, and mining represented 9.3 percent of all employment. By 2017, they represented only 2.2 percent of this population, a 76 percent decline. The secondary sector has remained relatively steady, with construction and manufacturing employment respectively constituting 11.6 and 14.2 percent of all economic activity. Arts, entertainment, accommodation, and food service activities have experienced the largest growth. In 2000, these represented 3.2 percent of the economy. By 2017, they constituted 8.1 percent of all industry employment.

Income	2000	2010	2017 (Estimate)	2000- 2010	2010- 2017
per capita personal income	4637	6134	7326	32.3%	19.4%

Median HH income 9945 13713 14296 37.9% 4.3%

Per capita income increased by 19.4 percent in the 2010-2017 period, reaching an average of USD\$7,326. Median household income increased, although at a much lower rate (4.3 percent), amounting to USD\$14,296 in 2017.

<b>Employment</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Total civilian labor force, percent of population age 16+ years	29.5	46.3	37.6	56.9%	-18.8%
Not in Labor Force	70.5	53.7	62.4	-23.8%	16.2%
Unemployment Rates	7.7	30.7	32.1	298.7%	4.6%
<b>Gender of Labor force</b>					
In civilian labor force, female, percent of population age 16 years+	22.2	41.1	31.9	85.1%	-22.4%

The total civilian labor force has varied in the past decades. In the 2000, this group represented 29.5 percent of the population, and increased to 46.3 percent in 2010. However, in 2017, the proportion declined once again, now comprising 37.6 percent of the population. The remaining 62.4 percent is not in the laborforce. Unemployment rates have been on the rise since the 2000s, from 7.7 percent to 30.7 percent in 2010, and even higher at 32.1 percent of the population in 2017. The proportion of women who are part of the laborforce declined by 22.4 percent between 2010 and 2017, going from 41.1 percent to 31.9 percent of this group.

### Social Assets and Vulnerabilities

	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
<b>Educational attainment</b>				<b>2000- 2010</b>	<b>2010- 2017</b>
High school graduate or higher, percent of persons 25 years+	47.5	58.4	64.4	22.9%	10.3%
Bachelor's degree or higher, percent of persons age 25+ years	11.1	13.3	16	19.8%	20.3%
<b>Poverty and persistent poverty</b>					
Individuals below poverty level, percent	68	62.4	56.3	-8.2%	-9.8%
<b>Income maintenance and public assistance</b>					
Specific pulic assistance programs (HH w/food stamps/SNAP in past 12 months)		52.7	55.4		5.1%
Gross rent as a percent of HH Income is 35 percent or more		41.2	41.8		1.5%

Educational attainment in Orocovis has been on the rise since the 2000s. The percentage of the population who held a high school degree or higher increased by 22.9 percent in the 2000-2017 period, from 47.5 percent to 58.4 percent of the population. This proportion kept increasing, until reaching 64.4 percent in 2017. Those who have a bachelor's degree or higher have also increased, from 11.1 percent in 2000, to 16 percent in 2017.

At the same time, poverty levels have been on decline. In 2000, the percentage of the population living below the poverty level was 68 percent. This percentage declined to 62.4 percent in 2010, and to 56.3 percent in 2017. On the contrary, the percentage of the population that qualifies for public assistance rose from 52.7 percent in 2010, to 55.4 percent in 2017. Similarly, the percentage of the population that pays over one third of their income in rent increased from 41.2 percent to 41.8 percent.

### Agriculture

	2002	2007	2012	% Change	
				2002-2007	2007-2012
<b>Farms and production</b>					
Number of farms	923	621	506	-32.7%	-18.5%
Land in farms (cuerdas)	22242	16955	15592	-23.8%	-8.0%
<b>Land use</b>					
Harvested (no. Of farms)	907	492	418	-45.8%	-15.0%
Used for pasture or grazing (no. Of farms)	175	132	136	-24.6%	3.0%
<b>By tenure of principal operators (no. Of farms)</b>					
Full owners	687	496	398	-27.8%	-19.8%
Part owners	155	70	37	-54.8%	-47.1%
Tenants	81	55	71	-32.1%	29.1%
<b>Principal operator characteristics</b>					
Hired farm workers (number)	911	1142	673	25.4%	-41.1%
Agregados and sharecroppers	27	47	49	74.1%	4.3%
<b>Principal operators by sex</b>					
Male	847	495	447	-41.6%	-9.7%
Female	76	68	9	-10.5%	-86.8%
N/a	0	58	50		-13.8%



The agricultural sector in Orocovis has been deteriorating, with the number of farms declining by 32.7 percent and 18.5 percent in the 2000-2010 and 2010-2017 periods, respectively. By 2017, the municipio totaled 506 farms, and 15,592 cuerdas of land. Four hundred and eighteen of these farms are used for harvesting, while 136 are used for pasture or grazing. Full owners represent the largest proportion of principal operators, with a total of 398 farms operated by this group. Part ownership has significantly declined since 2007, representing 7.3 percent of all operators, while tenants represent roughly 14 percent of principal operators.

The number of hired farm workers declined by 41.1 percent between 2007 and 2012, estimated at 673 in 2012. The number of agregados and sharecroppers have remained steady. Women operate only 1.7 percent of all farms, in contrast with men who operate almost 88 percent of the total.

## Utua do

### Demographics

Demographic Characteristics	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Total Persons	35336	33149	30209	-6.2%	-8.9%
Population Density (pop. per sq. mile)	311.5	292	-	-6.3%	-
Sex Distribution	2000	2010	2017 (Estimate)	2000- 2010	2010- 2017
Female Persons, percent	50.5	51	51.4	1.0%	0.8%

The current population in Utua do municipio is approximately 30,209. Total population decreased by 6.2 percent between 2000 and 2010, while continuing to decrease in more recent years. In the 2010-2017 period, population decreased by 8.9 percent. Sex distribution remained roughly the same, with an estimate of 51.4 of the population identifying as female in 2017.

Age Distribution	2000	2010	2017 (Estimate)	2000- 2010	2010- 2017
------------------	------	------	--------------------	---------------	---------------

Persons under 5 years, percent	7.3	5.9	5	-19.2%	-15.3%
Persons, 5 - 19	26.9	22	19.1	-18.2%	-13.2%
Persons, 20 - 64	53.9	57.3	56.9	6.3%	-0.7%
Persons 65 years and over, percent	11.9	14.9	19.1	25.2%	28.2%
Median Age	32.1	38	41.7	18.4%	9.7%

The age distribution of the population in Utuado has changed significantly in the past few decades. There has been significant decrease in persons under 5 years, amounting to -19.2 percent in the 2000-2010 period, and -15.3 percent in the 2010-2017 period. The percentage of people between 5 and 19 years old has also decreased, going from 26.9 percent in 2000 to roughly 19 percent in 2017. Within the same time period, people aged 20-64 went from 53.9% to 56.9% of the population. In the same way, the percentage of people 65 or older has enlarged by 28.2 percent in the period between 2010 and 2017, indicating a larger percentage of older population within the municipio. The median age is 41.7 years old, which increased by roughly 10 years since 2000.

	2000	2010	2017 (Estimate)	2000- 2010	2010- 2017
<b>Residence</b>					
Urban, percent	66.5	53.1	-	-20.2%	-
Rural, percent	33.5	46.9	-	40.0%	-
<b>Household Characteristics</b>					
Total households	9152	11885	9727	29.9%	-18.2%
average household size	3.13	2.78		-11.2%	-100.0%
<b>HH family type</b>					
family	81.7	76.1	73.9	-6.9%	-2.9%
non-family	18.3	23.9	26.1	30.6%	9.2%
Female HH no husband present	19.5	20.8	21.1	6.7%	1.4%
<b>Housing</b>					
Total housing units	12471	14192	13315	13.8%	-6.2%
<b>Occupancy</b>					
Occupied	89.9	83.7	73.1	-6.9%	-12.7%
Vacant	10.1	16.3	29.6	61.4%	81.6%
<b>Tenure</b>					
Owner occupied	71.5	68.4	64.5	-4.3%	-5.7%
Renter Occupied	28.5	31.6	35.5	10.9%	12.3%

Median House value (owner occupied units)	USD\$90,100	USD\$93,500	3.8%
---	-------------	-------------	------

Between 2000 and 2010, the population in Utuado became increasingly rural. The percent of urban residence fell by 20.2%, while the number of rural residents expanded by 40% in the same time frame. The total number of households in the municipio amounts to an estimated 9727 in 2017, with an average household size of 2.78 persons per household in 2010. The number of total households decreased by 18.2 percent between 2000 and 2017. Non-family households have increased by 30.6% and 9.2% in the 2000-2010 and 2010-2017 periods respectively. On the contrary, family households have dropped by 6.9 and 2.9 percentage points in the same time. Female Households with no husband present represent 21.1 percent of all family households.

Housing units in the municipio have also decreased, although in fewer proportion than households. Between 2010 and 2017, total number of housing units went from 14,192 to 13,315, decreasing by a total of 6.2 percent. There has been significant rise in the proportion of vacant houses, going from 10.1 percent vacancy in 2000, to almost 29.6 percent in 2017. Tenure structure has also varied, as we can see an increase of 10.9 and 12.3 percent in renter-occupied housing between 2000-2010 and 2010-2017 respectively. Despite an increase in vacant housing, the median house value in Utuado increased by 3.8 percent between 2010 and 2017.

### Industry and Employment

Industry	2000	2010	2017 (Estimate)	2000- 2010	2010- 2017
Agriculture, forestry, fishing and hunting, and mining	6.1	4.8	5.2	-21.3%	8.3%
Construction	11.1	9.7	7.3	-12.6%	-24.7%
Manufacturing	8.7	3.8	5.7	-56.3%	50.0%
Educational, health, social services	26.9	29.6	32.0	10.0%	8.1%
Arts, entertainment, recreation, accommodation, food services	3.6	5.3	9.7	47.2%	83.0%
Retail trade	11.5	13.1	17.6	13.9%	34.4%

The structure of industry in Utuado has also changed in the past years. Between 2010 and 2010. There has been an increase in employment within the primary sector, with an 8.3% growth in the percentage of the population employed in agriculture, forestry, fishing and hunting, and mining. The secondary sector has seen mixed outcomes in this period, with manufacturing employment increasing by 50 percent, and the construction sector decreasing by 24.7 percent. Finally, we can see the most dramatic change in employment within the service sector, which has seen an increase of 83% in arts, entertainment, recreation, accommodation, and food services; a 34.4% increase in retail trade; and an 8.1% increase in educational, health, and social services. These changes in structure indicate that the municipio is rapidly moving towards a third sector economy, primarily focused on services.

<b>Income (in USD)</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Per capita personal income	5086	6775	8140	33.2%	20.1%
Median HH income	9948	13509	15931	35.8%	17.9%

Income has increased, both at the per capita level, and at the household level. By 2017, per capita personal income was estimated at USD\$8140, which increased by 20.1 percent between 2010 and 2017. In the same year, Median household income was estimated at USD\$15,931, increasing by 17.9% in the period between 2010 and 2017.

<b>Employment</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Total civilian labor force, percent of population age 16+ years	34.4	41.6	38	20.9%	-8.7%
Not in Labor Force	65.6	58.4	62	-11.0%	6.2%
Unemployment Rates	10.3	12.6	11.4	22.3%	-9.5%
<b>Gender of Labor force</b>					
In civilian labor force, female, percent of population age 16 years+	27.9	36.3	34.7	30.1%	-4.4%

In 2017, an estimated 38 percent of Utuado's population was part of the civilian labor force, decreasing by 8.7 percent from the previous estimate in 2010. The remaining 62 percent of the population is not in the labor force, while unemployment rates rise to 11.4%. In the period between 2000 and 2010, unemployment rate in the municipio expanded by 22.3%. Estimates from 2017 also indicate that 34.7 of females aged 16 and over are currently part of the civilian labor force.

### Social Assets and Vulnerabilities

<b>Educational attainment</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
High school graduate or higher, percent of persons 25 years+	19.2	60.6	70.4	215.6%	16.2%
Bachelor's degree or higher, percent of persons age 25+ years	11.9	16.7	18	40.3%	7.8%
<b>Poverty and persistent poverty</b>					
Individuals below poverty level, percent	63.6	58.1	53	-8.6%	-8.8%
<b>Income maintenance and public assistance</b>					
Specific pulic assistance programs (HH w/food stamps/SNAP in past 12 months)		47.9	47.2		-1.5%
Gross rent as a percent of HH Income is 35 percent or more		50.8	47.2		-7.1%

Social assets and vulnerabilities indicators show significant educational attainment in the Utuado municipio between 2000 and 2010, with percent of high school graduates increasing from 19.2 percent to 60.6 percent. The percentage of people attaining a bachelor's degree or higher also grew, going from 11.9 to 16.7 percent in the same time frame. In 2017, 70.4 percent of the population has a high school degree or higher, while 18 percent has a bachelor's degree or higher.

Just above half of Utuado's population, 53 percent of the total, live below the poverty level. However, this percentage decreased by 8.6 percent between 2000 and 2010, and by 8.8

percent between 2010 and 2017. Despite this decrease, 47.2 percent of the population are part of public assistance programs such as food stamps, and the same percent pay more than 35 percent of their household income on gross rent.

### Agriculture

	2002	2007	2012	2002- 2007	2007- 2012
<b>Farms and production</b>					
Number of farms	1241	740	591	-40.4%	-20.1%
land in farms (cuerdas)	23741	16525	14349	-30.4%	-13.2%
<b>Land Use</b>					
Harvested (no. of farms)	1196	689	560	-42.4%	-18.7%
Used for pasture or grazing (no. of farms)	78	94	77	20.5%	-18.1%
<b>By tenure of principal operators (no. of farms)</b>					
Full owners	1097	606	528	-44.8%	-12.9%
Part owners	99	96	19	-3.0%	-80.2%
Tenants	45	38	44	-15.6%	15.8%
<b>principal operator characteristics</b>					
Hired farm workers (number)	1059	1559	1014	47.2%	-35.0%
Agregados and sharecroppers	53	141	104	166.0%	-26.2%
<b>Principal operators by sex</b>					
Male	1108	602	497	-45.7%	-17.4%
Female	133	86	21	-35.3%	-75.6%
N/A	0	52	73		40.4%

The agricultural sector in Utuado has been in decline for the past few decades. Number of farms declined by 20.1, while land in farms decreased by 13.2 percent between 2007 and 2012. The number of harvested farms and those used for pasture or grazing also decreased by 18.7 and 18.1 respectively.

The tenure status of the principal farm operators also shifted. The number of full owners and part owners correspondingly decreased by 12.9 and 80.2 percent in the 2007-2012 period. Furthermore, the number of tenants increased by 15.8%, indicating a shift towards higher insecurity of tenure in the area. There has been a decline of 35 percent in the number of hired farm workers, and 26.2 percent in the number of agregados and sharecroppers. While there has

been a decline in the number of principal operators for both sexes, the decline is over four times higher for women (75.6 percent) than it is for men (17.4 percent).

<b>Market value of agricultural products sold</b>	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>2002-2007</b>	<b>2007-2012</b>
Agricultural products sold (dollars)	10,706,611	10,114,707	9,544,345	-5.5%	-5.6%
Crops sold (dollar)	7,026,283	7,415,880	7,207,863	5.5%	-2.8%
Coffee (dollars)	3,868,478	4,101,576	2,478,902	6.0%	-39.6%
<b>Income from farm-related sources</b>					
Income (dollars)	-	914,455	902,671	-	-1.3%
<b>Crops harvested for sale</b>					
Coffee harvested for sale (total coffee, qty harvested in cuerdas)	5960	3826	2612	-35.8%	-31.7%

Despite the sharp decline in the agricultural sector in Utuado, the market value of agricultural products sold in the municipio did not decline at the same rate. Between 2007 and 2012, the value of agricultural products sold only decreased by 5.6 percent, amounting to a total of USD\$9,544,345.00 in 2012. In the same period, revenue from crops sold decreased by roughly half that rate, at 2.8 percent. Coffee crops experienced the biggest fall, with value of coffee crops decreasing by 39.6 percent, and total quantity of coffee harvested declining by 31.7 percent. Within this period, income from farm related sources only decreased by 1.3 percent, and reached a total of USD\$902,671.00 in 2012.

## Yauco

### Demographics

Variable	Census 2000	Census 2010	ACS 2017 (Estimate)	% Change	
				2000-2010	2010-2017
<b>Demographic Characteristics</b>					
Total Persons	46384	42043	37585	-9.4%	-10.6%
Population Density (population per sq. mile)	680.6	616.5	-	-9.4%	-
<b>Sex Distribution</b>					
Female Persons, percent	51.2	51.6	52	0.8%	0.8%

The population in Yauco is estimated at 37,585 inhabitants. Population declined by 9.4 and 10.6 percent respectively in the 2000-2010 and 2010-2017 periods. Population density was last estimated at 616.5 persons per square mile. Sex distribution has remained roughly the same, with 52 percent of the population identifying as females in 2017.

<b>Age Distribution</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
Persons under 5 years, percent	7.5	5.9	4.8	-21.3%	-18.6%
Persons, 5 - 19	25.5	21	18.6	-17.6%	-11.4%
Persons, 20 - 64	56.1	58.3	51	3.9%	-12.5%
Persons 65 years and over, percent	10.8	11.4	19.3	5.6%	69.3%
Median Age	31.8	38.1	42.1	19.8%	10.5%

The population has become increasingly older, with median age increasing from 31.8 years old to 42.1 years old between 2000 and 2017. Younger groups have decreased significantly. The percentage of children under 5 decreased from 7.5 to 4.8 in the past two decades. Similarly, groups aged 5 to 19 decreased from 25.5 to 18.6 percent of the population. Persons aged 20 to 64 remain to be the largest percentage at the population, representing 51 percent of the total. The proportion of persons aged over 65 have increased from 10.8 percent to 19.3 percent of the population since the 2000s.

<b>Residence</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
Urban, percent	88.5	81.6	-	-7.8%	-
Rural, percent	11.5	18.4	-	60.0%	-
<b>Household characteristics</b>					
Total households	15012	15138	10749	0.8%	-29.0%
Average household size	3.07	2.75	-	-10.4%	-
<b>HH family type</b>					
Family	82	75.8	65.5	-7.6%	-13.6%
Non-family	18	24.2	34.5	34.4%	42.6%
Female HH no husband present	20.7	21.3	18.7	2.9%	-12.2%



<b>Housing</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>2000- 2010</b>	<b>2010- 2017</b>
Total housing units	17062	18020	17344	5.6%	-3.8%
<b>Occupancy</b>					
Occupied	88	84	62	-4.5%	-26.2%
Vacant	12	16	38	33.3%	137.5%
<b>Tenure (Occupied HH)</b>					
Owner occupied	77	76	76.2	-1.3%	0.3%
Renter Occupied	23	24	23.8	4.3%	-0.8%
Median House value (owner occupied units)		87800	91500		4.2%

Roughly 18.4 percent of Yauco's population lives in rural areas. Total households total 10,749, a 29 percent decline from the 2010 count. Most households, 65.5 percent, constitute family households. Female headed households, with no husband present, represent 18.7 percent of the total.

The number of housing units has decreased at a lower rate than households, 3.8 percent from the 2010 value, now estimated at 17,344. Vacancy rates have been rising since 2000, going from 12 percent, to 16 percent in 2010, and 38 percent in 2017. The ratio of owner and renter occupied households has not varied, with owners occupying 76.2 of all households. Median house value increased by 4.2 percent since 2010, from USD\$87,800 to USD\$91,500 in 2017.

### **Industry and Employment**

<b>Industry</b>	<b>2000</b>	<b>2010</b>	<b>2017 (Estimate)</b>	<b>% Change</b>	
				<b>2000- 2010</b>	<b>2010- 2017</b>
Agriculture, forestry, fishing and hunting, and mining	4.5	4.7	5.7	4.4%	21.3%
Construction	9.5	7.8	4.3	-17.9%	-44.9%
Manufacturing	13.7	11.2	9.7	-18.2%	-13.4%
Educational, health, social services	19.4	22.3	27.5	14.9%	23.3%
Arts, entertainment, recreation, accommodation, food services	4.6	6.2	7.3	34.8%	17.7%
Retail trade	15.3	16.9	10.1	10.5%	-40.2%

Agriculture, forestry, fishing and hunting and mining activities increased by 1 percent since 2010, and now represent 5.7 percent of all employment. Construction and manufacturing have seen significant decline, from 7.8 to 4.3 percent, and from 11.2 to 9.7 percent respectively. Educational, health and social services have made the most significant increase, from 22.3 percent in 2010, to 27.5 percent of industry employment in 2017. Arts, entertainment, recreation, accommodation and food services have also expanded, and now comprise 7.3 percent. Finally, retail trade continues to be one of the largest activities (with 10.1 percent of all employment), despite the decline this sector has experienced in recent years.

Income	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Per capita personal income	6434	7374	8124	14.6%	10.2%
Median HH income	11924	14314	14451	20.0%	1.0%

Personal income has been on the rise, increasing by 10.2 percent since 2010, amounting to USD\$8,124 in 2017. In the same timeframe, median household income only increased by 1 percent, totaling USD\$14,451 today.

Employment	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Total civilian labor force, percent of population age 16+ years	39.9	46.1	38.3	15.5%	-16.9%
Not in Labor Force	60.1	53.9	61.7	-10.3%	14.5%
Unemployment Rates	10	27.4	24	174.0%	-12.4%
<b>Gender of Labor force</b>					
In civilian labor force, female, percent of population age 16 years+	31.7	36.3	31	14.5%	-14.6%

Yauco's civilian labor force is roughly the same as it was at the beginning of the century (38.3 percent of the population), despite experiencing some increase around 2010. Unemployment

rates increased from 10 percent in 2000, to 27.4 percent in 2010, declining again to 24 percent in 2017. 31 percent of females are part of the civilian labor force.

### Social Assets and Vulnerabilities

	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
<b>Educational attainment</b>					
High school graduate or higher, percent of persons 25 years+	55.8	61.5	71.6	10.2%	16.4%
Bachelor's degree or higher, percent of persons age 25+ years	15.8	16.7	22.5	5.7%	34.7%
<b>Poverty and persistent poverty</b>					
Individuals below poverty level, percent	56.6	62.5	58.2	10.4%	-6.9%
<b>Income maintenance and public assistance</b>					
Specific public assistance programs (HH w/food stamps/SNAP in past 12 months)	-	43.4	46.5	-	7.1%
Gross rent as a percent of HH Income is 35 percent or more	-	45.2	51.6	-	14.2%

Educational attainment in the municipio has improved significantly, with those holding a minimum of a high school degree increasing from 55.8 percent in 2000, to 71.6 percent in 2017. Those holding a bachelor's degree or higher also increased, from 15.8 percent in 2000 to 22.5 percent in 2017.

Poverty levels have declined since 2010, with the percent of individuals below the poverty line declining from 62.5 percent to 58.2 percent in 2017. However, the percentage of the population who qualify for specific public assistance programs increased by 3.1 percent; and the percent of people who pay over one third of their household income in rent increased by 6.4 percent.

### Agriculture

	2002	2007	2012	% Change	
				2002- 2007	2007- 2012
<b>Farms and production</b>					
Number of farms	582	515	303	-11.5%	-41.2%
Land in farms (cuerdas)	15568	11198	10959	-28.1%	-2.1%
<b>Land use</b>					

Harvested (no. Of farms)	554	445	296	-19.7%	-33.5%
Used for pasture or grazing (no. Of farms)	45	79	57	75.6%	-27.8%
<b>By tenure of principal operators (no. Of farms)</b>					
Full owners	530	416	283	-21.5%	-32.0%
Part owners	27	61	11	125.9%	-82.0%
Tenants	28	38	9	35.7%	-76.3%
<b>Principal operator characteristics</b>					
Hired farm workers (number)	1216	1321	1123	8.6%	-15.0%
Agregados and sharecroppers	57	59	28	3.5%	-52.5%
<b>Principal operators by sex</b>					
Male	529	416	268	-21.4%	-35.6%
Female	53	37	35	-30.2%	-5.4%
N/a	0	62	0		

Agriculture in the region has diminished, with just under 50 percent of farms disappearing between 2002 and 2012, from 582 to 303. Total land in farms has also decreased, although at a lower rate, from 15,568 cuerdas in 2002, to 10,959 cuerdas in 2012. Almost 98 percent of farms are used for harvesting, while 18 percent are used for pasture and grazing.

Full owners operate 93.3 percent of the total number of farms, while part owners and tenants operate 3.6 and 2.9 percent of farms respectively. Since 2010, the number of workers hired by farms declined by 15 percent, reaching 1,123 farm workers in 2017. In the same year, there were 28 agregados and sharecroppers, which declined by 52.5 percent since 2010. The majority of farms, 88 percent of the total are operated by males. Females, on the other hand, operate roughly 11 percent of all farms.

Market value of agricultural products sold	2000	2010	2017	% Change	
				2002-2007	2007-2012
Agricultural products sold (dollars)	\$6,740,122	\$7,898,405	\$7,920,200	17.2%	0.3%
Crops sold (dollar)	\$5,833,482	\$7,686,331	\$7,352,338	31.8%	-4.3%
Coffee (dollars)	\$2,902,136	\$2,977,167	\$1,952,998	2.6%	-34.4%
<b>Income from farm-related sources</b>					
Income (dollars)	-	\$1,172,700	\$961,532	-	-18.0%
<b>Crops harvested for sale</b>					
Coffee harvested for sale (total coffee, qty harvested in cuerdas)	3807	2769	2621	-27.3%	-5.3%

Despite the decline in agricultural production in Yauco, the market value of agricultural products sold have remained roughly the same since 2010, with total revenue totaling USD\$7,920,200 in 2017. Crops sold accounted for 92 percent of this revenue, or USD\$7,352,338. Other farm related sources amounted to USD\$961,532. Coffee revenues were estimated at USD\$1,952,998, collected from the harvest of 2,621 cuerdas of land.

## Puerto Rico

### Demographics

Demographic Characteristics	Census	Census	2017 (Estimate)	% Change	
	2000	2010		2000- 2010	2010- 2017
Total Persons	3,808,610	3,725,789	3,468,963	-2.2%	-6.9%
Population Density (population per sq. mile)	1112.1	1088.2	-	-2.1%	-

Sex Distribution	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Female Persons, percent	51.9	52.1	52.3	0.4%	0.4%

Puerto Rico's total population has declined by 6.9 percent since 2010, and was estimated at 3,468,963 habitants in 2017. Population density was last estimated at 1088 persons per square mile. Sex distribution has been relatively steady, with 52.3 percent of the population identifying as female.

Age Distribution	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Persons under 5 years, percent	7.8	6	5	-23.1%	-16.7%
Persons, 5 - 19	24.2	21.2	19	-12.4%	-10.4%
Persons, 20 - 64	56.8	58.3	57.9	2.6%	-0.7%
Persons 65 years and over, percent	11.2	14.6	18.1	30.4%	24.0%
Median Age	32.1	36.9	40.1	15.0%	8.7%

Age distribution in the country has also shifted significantly. Younger groups have decreased as a proportion of the population, while older groups have increased. Children under 5 comprised 7.8 percent of the population in 2000. By 2017, this figure had declined to 5 percent. Similarly, individuals aged 5 to 19 decreased from 24.2 percent to 19 percent of the population. Those aged 65 years or more increased from 11.2 to 18.1 percent in 2017. People aged 20-64 is the largest age group, comprising 57.9 percent of the total. Median aged increased from 32.1 years old in 2000, to 40.1 years old in 2017.

<b>Residence</b>	<b>2000</b>	<b>2010</b>	2017	<b>% Change</b>	
				<b>2000-2010</b>	<b>2010-2017</b>
Urban, percent	94.4	93.8	-	-0.6%	-
Rural, percent	5.6	6.2	-	10.7%	-
<b>Household Characteristics</b>					
Total households	1,261,325	1,376,531	1,222,606	9.1%	-11.2%
average household size	2.98	2.68	-	-10.1%	-
<b>HH family type</b>					
family	79.6	73.1	69.6	-8.2%	-4.8%
non-family	20.4	26.9	30.4	31.9%	13.0%
Female HH no husband present	21.3	22.6	23.8	6.1%	5.3%
<b>Housing</b>					
Total housing units	1,418,476	1,636,946	1,567,300	15.4%	-4.3%
<b>Occupancy</b>					
Occupied	88.9	84.1	78	-5.4%	-7.3%
Vacant	11.1	15.9	22	43.2%	38.4%
<b>Tenure (Occupied HH)</b>					
Owner occupied	72.9	71.6	68.5	-1.8%	-4.3%
Renter Occupied	27.1	28.4	31.5	4.8%	10.9%
Median House value (owner occupied units)		112600	115300		2.4%

In 2010, 93.8 percent of the country's population lived in urban areas. Total households declined by 11.2 percent since 2010, totaling 1,222,606 households in 2017. Average household size was last estimated in 2010, with an average of 2.68 persons per household. 69.6 percent of

households belong to families, while the remaining 30.4 percent belong to non-families. The proportion of households led by females with no husband present is 23.8 percent.

Housing units declined at a lower rate, 4.3 percent since 2010, and are estimated at 1,567,300 houses in the entire territory. Vacancy has been on the rise, with 15.9 percent of households vacant in 2010, and an estimated 22 percent in 2017. Furthermore, household occupied by renters have increased in proportion, from 28.4 percent in 2010, to 31.5 percent in 2017. Median house values increased by 2.4 percent in the same period, from USD\$112,600 to USD\$115,300.

### Industry and Employment

Industry	2000	2010	2017 (Estimate)	% Change	
				2000- 2010	2010- 2017
Agriculture, forestry, fishing and hunting, and mining	1.7	1.3	1.4	-23.5%	7.7%
Construction	8.6	7.5	5.1	-12.8%	-32.0%
Manufacturing	13.5	10.2	8.9	-24.4%	-12.7%
Educational, health, social services	19.3	22.4	23.9	16.1%	6.7%
Arts, entertainment, recreation, acommodation, food services	6.5	8.2	9.8	26.2%	19.5%
Retail trade	11.7	12.8	13.4	9.4%	4.7%

Puerto Rico's economy has shifted towards a tertiary sector economy. Educational, health, and social services employ the majority of the population, 23.9 percent of the total. Retail trade represents 13.4 of employment, while arts, entertainment, and food services represent 9.8 percent of the total. Construction and manufacturing have seen the most decline since 2010, decreasing by 3.5 and 4.6 percent respectively. Primary sector activities such as agriculture, forestry, fishing and hunting, and mining have remained relatively steady as a proportion of overall employment, constituting 1.4 percent of industry activity.

<b>Income</b>	<b>2000</b>	<b>2010</b>	<b>2017</b>	<b>2000-2010</b>	<b>2010-2017</b>
per capita personal income	8185	10335	12081	26.3%	16.9%
Median HH income	14412	18791	19775	30.4%	5.2%

Both per capita and median household income have been on the rise in Puerto Rico. Per capita income increased by 16.9 percent since 2010, estimated at USD\$12,081 in 2017. Median household income increased at a much lower rate, 5.2 percent, and is estimated at USD\$19,775 in 2017.

<b>Employment</b>	<b>2000</b>	<b>2010</b>	<b>2017</b>	<b>2000-2010</b>	<b>2010-2017</b>
Total civilian labor force, percent of population age 16+ years	40.7	47.2	44.5	16.0%	-5.7%
Not in Labor Force	59.3	52.8	55.5	-11.0%	5.1%
Unemployment Rates	7.8	16.7	17.5	114.1%	4.8%
<b>Gender of Labor force</b>					
In civilian labor force, female, percent of population age 16 years+	33.7	41.2	39.9	22.3%	-3.2%

44.5 percent of Puerto Rico's population is part of the civilian labor force, which has declined by 5.7 percent since 2010. In addition, unemployment rates have increased from 16.7 percent in 2010 to 17.5 percent in 2017. The percent of women who are part of the labor force has also declined, from 41.2 percent to 39.9 percent of women in 2017.

### **Social Assets and Vulnerabilities**

<b>Social assets and vulnerabilities</b>	<b>% Change</b>				
	<b>2000-2010</b>	<b>2010-2017</b>			
<b>Educational attainment</b>					
High school graduate or higher, percent of persons 25 years+	60	67.6	74.7	12.7%	10.5%
Bachelor's degree or higher, percent of persons age 25+ years	18.3	21.4	24.9	16.9%	16.4%
<b>Poverty and persistent poverty</b>					
Individuals below poverty level, percent	48.2	42.5	44.9	-11.8%	5.6%
<b>Income maintenance and public assistance</b>					



Specific public assistance programs (HH w/food stamps/SNAP in past 12 months)	33.1	38.3	-	15.7%
Gross rent as a percent of HH Income is 35 percent or more	47.7	46.6	-	-2.3%

Educational attainment has improved significantly. In 2010, 67.6 percent of the population held a minimum of a high school degree. By 2017, this proportion had increased to 74.7 percent.

Similarly, the proportion of the population with a minimum of a bachelor's degree increased from 21.4 percent to 24.9 percent.

Puerto Rico's poverty levels have increased since 2010, with 44.9 percent of the population living in conditions of poverty in 2017. 38.3 percent of the population qualifies for public assistance programs, while 46.6 percent pay more than 35 percent of their household income in rent.

### Agriculture

Farms and production	2002	2007	2012	% Change	
				2000-2010	2010-2017
Number of farms	17659	15745	13159	-10.8%	-16.4%
Land in farms (cuerdas)	690687	557528	584988	-19.3%	4.9%
<b>Land use</b>				<b>2000-2010</b>	<b>2010-2017</b>
Harvested (no. Of farms)	15284	10595	10008	-30.7%	-5.5%
Used for pasture or grazing (no. Of farms)	3783	4891	4048	29.3%	-17.2%
<b>By tenure of principal operators (no. Of farms)</b>				<b>2000-2010</b>	<b>2010-2017</b>
Full owners	13693	11402	9362	-16.7%	-17.9%
Part owners	2330	1918	1069	-17.7%	-44.3%
Tenants	1636	39	83	-97.6%	112.8%
<b>Principal operator characteristics</b>				<b>2000-2010</b>	<b>2010-2017</b>
Hired farm workers (number)	31736	29641	30122	-6.6%	1.6%
Agregados and sharecroppers	1281	2067	2277	61.4%	10.2%
<b>Principal operators by sex</b>				<b>2000-2010</b>	<b>2010-2017</b>
Male	16105	13471	12066	-16.4%	-10.4%
Female	1554	1408	627	-9.4%	-55.5%
N/A	-	866	466		-46.2%

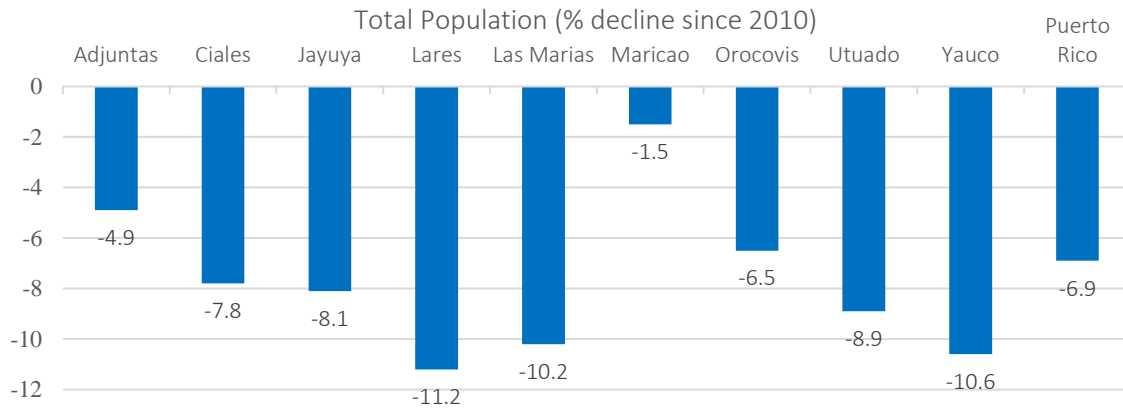
Between 2007 and 2012, the number of farms in the territory decreased by 16.4 percent, with a total of 13,159 farms in 2012. Throughout this period, the total land in farms actually increased by 4.9 percent, with a total of 584,988 cuerdas of land in 2012. Out of the total, 10,008 farms are used for harvesting, while 4,048 are used for pasture or grazing. Full owners operate 71.1 percent of all farms, while part owners operate 8.1 percent, and tenants operate less than 1 percent of the total. The number of hired farm workers increased by 1.6 percent since 2010, totaling 30,122 workers in 2017. Agregados and sharecroppers increased by 10.2 percent in this period, totaling 2,277 in 2017. The distribution of principal operators by sex favors males, and has become even more unequal in recent years. In 2010, females represented 9 percent of all principal operators. By 2017, they had declined to 4.7 percent of the total.

<b>Market value of agricultural products sold</b>	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>2002-2007</b>	<b>2007-2012</b>
Agricultural products sold (dollars)	\$581,543,942	\$515,685,532	\$547,628,613	-11.3%	6.2%
Crops sold (dollar)	-	\$218,835,477	\$271,320,069	-	24.0%
Coffee (dollars)	-	\$41,823,565	\$29,273,215	-	-30.0%
<b>Income from farm-related sources</b>					
Income (dollars)	-	\$42,254,497	\$52,420,528	-	24.1%
<b>Crops harvested for sale</b>					
Coffee harvested for sale (total coffee, qty harvested in cuerdas)	57549	38535	33213	-33.0%	-13.8%

Despite the decline in agricultural production in the 2007-2012 period, revenues increased by 6.2 percent amounting to USD\$547,628,613 in 2012. Crops sold accounted for USD\$271,320,069, while income from other farm related sources were estimated at USD\$52,420,528. Revenue from coffee totaled USD\$29,273,215 in 2012, from the harvest of 33,213 cuerdas of land.

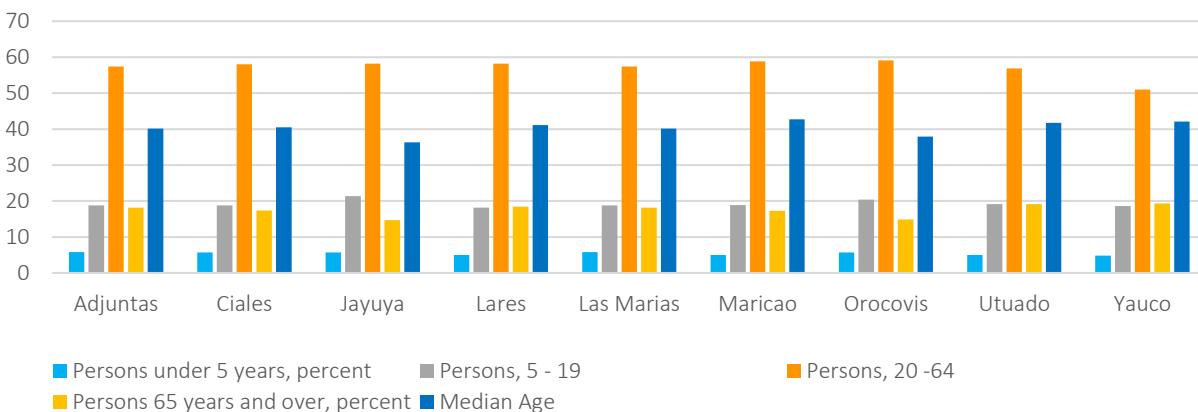
## Results

### Demographic Characteristics



The most significant demographic change throughout the region has been population decline. Since 2010, average decline rate for the entire island was 6.9 percent. In the coffee region, we can see that the decline was as high as 11.2 percent (Lares), and as low as 1.5 percent (Maricao). The average decline rate for the selected municipios (excluding Puerto Rico) was 7.7 percent, higher than the country’s average. Throughout the past decades, sex distribution has remained roughly the same in all the municipios, with an average of 52.3 percent of the population identifying as female in 2017.

### Age Distribution

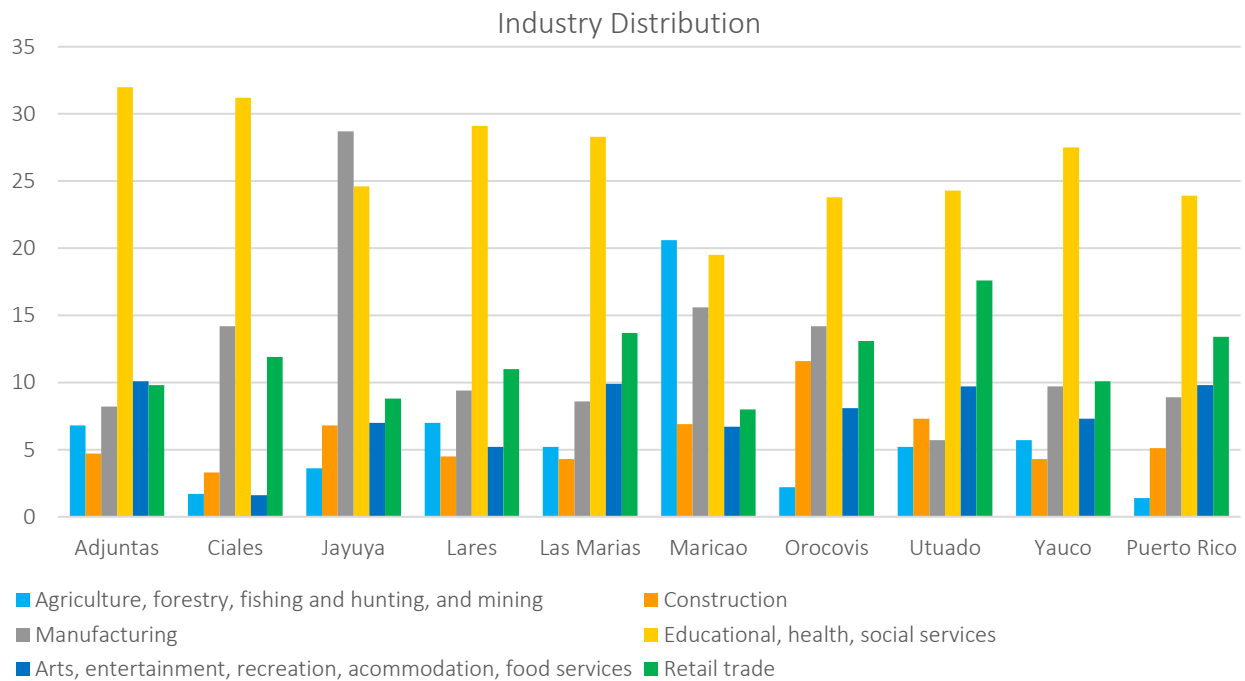




<b>Vacancy Rate (% of households)</b>	20	18.9	22.2	17.8	22.6	27	20.3	29.6	38	22
<b>Vacancy Rate (Change since 2010)</b>	27.4	17.4	54.2	28.1	111.2	63.6	30.1	81.6	137.5	38.4

As expected, we can see significant decline in the number of households, as a result of overall population decline. Total households declined ranged from 8.3 percent (Ciales) to 29 percent (Yauco). In 6 out of the 9 selected municipios, household decline is higher than the national average (11.2 percent). Not surprisingly, total housing units declined at a much lower rate, with an average decline of 4.3 percent in the entire island. All of the municipios also show higher vacancy levels, with vacancy rates increasing as much as 111.2 percent (Las Marias) between 2010 and 2017.

**Economic Characteristics**



Industry distribution all across the country has shifted towards the tertiary sector. Educational, health, and social services employ the majority of the population in the country, and in all of the selected municipios. An average of 23.9 percent of the country's population in 2017 was employed in these activities. Furthermore, there has been significant increase in retail trade, arts, entertainment, recreation, accommodation, and food services.

The secondary sector (construction and manufacturing) has declined significantly, although it remains a significant portion of economic activities in some municipios such as Ciales, Jayuya, Orocovis, and Maricao.

Primary sector activities as a proportion of all economic activity is significantly low across the country. However, this proportion is higher in the coffee region, especially in municipios such as Adjuntas, Lares, Maricao, Utuado, and Yauco, where this sector employs from 5 up to 20 percent of the population.

	Adjuntas	Ciales	Jayuya	Lares	Las Marías	Maricao	Orocovis	Utuado	Yauco	Puerto Rico
<b>Income</b>										
per capita personal income	19.1	26.2	2.9	21.2	11.5	11.6	19.4	20.1	10.2	16.9
Median HH income	-2.5	6.4	0.4	5.1	4	23.1	4.3	17.9	1	5.2
<b>Employment</b>										
Labor force participation rate	42.2	29.8	36.1	42.4	33	33.4	37.6	38	38.3	44.5
Unemployment Rate	17.3	20.1	27.1	27.1	0.8	12.1	32.1	11.2	24	17.5
<b>Gender of labor force</b>										
In labor force, Female, percent of population age 16 years+	38	28.8	36.2	37.4	26.2	23.5	31.9	34.7	31	39.9

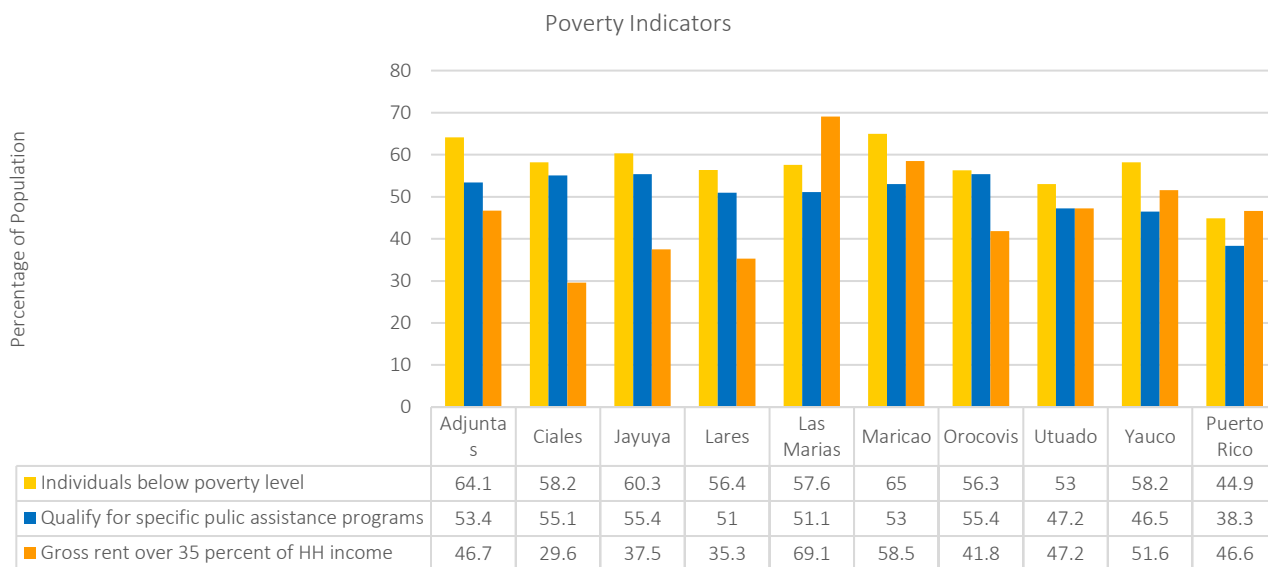
Both per capita and median household income increased throughout the 2010-2017 period. National per capita income increased by 16.9 percent, while the latter increased by 5.2

percent. Compared to the national average of 44.5 percent, labor force participation rates are lower in the coffee region, ranging from 29.8 to 42.4 percent. Female participation in the labor force is also lower in the selected municipios. In addition, unemployment rates are higher than Puerto Rico’s average in 5 out of 9 municipios. The mean unemployment rate in the coffee region is 19.2 percent.

**Social Assets and Vulnerabilities**

Educational attainment	Las									Puerto Rico
	Adjuntas	Ciales	Jayuya	Lares	Marias	Maricao	Orocovis	Utuaado	Yauco	
High school graduate or higher, percent of persons 25 years+	63.2	67.4	80.4	44.1	55.6	50.2	64.4	70.4	71.6	74.7
Bachelor's degree or higher, percent of persons age 25+ years	18.1	14.3	23.3	17.6	15	10.2	16	18	22.5	24.9

Educational attainment has improved significantly over the past two decades. As of 2017, 74.7 percent of the country had a minimum of a bachelor’s degree, while 24.9 percent had a minimum of a bachelor’s degree. Despite this achievement, educational attainment in the almost all selected municipios is much lower than the national average. Lares and Maricao have the lowest percentage of high school graduates, at 44.1 and 50.2 percent respectively. For these municipios,



the proportion of the population attaining a minimum of a bachelor's degree is even lower, at 17.6 and 10.2 percent, respectively.

Poverty levels have also been on decline, with roughly 44.9 percent of the Commonwealth population living under the poverty line in 2017. Other poverty indicators include the percentage of the population that qualifies for public assistance (38.3 percent) and households that pay over 35 of their income in rent. As we can see above, poverty levels are higher than the national average in all of the coffee region. These range between 53 (Utua) and 65 percent of the population (Maricao). In addition, larger percentages of the population qualify for specific public assistance programs.

### Agriculture and Production

Farms and production	Las									
	Adjuntas	Ciales	Jayuya	Lares	Marias	Maricao	Orocovis	Utua	Yauco	Puerto Rico
Number of farms (change since 2010)	31.7	-32.5	-21.7	-13.2	-26	-16.3	-18.5	-20.1	-41.2	-16.4
land in farms (cuerdas)	-5.9	-39.8	-29.6	0.7	-5	-27.6	-8	-13.2	-2.1	4.9
<b>Land Use</b>										
Harvested (no. of farms)	32	-27	-21.8	-10.8	-22.1	-15.6	-15	-18.7	-33.5	-5.5
Used for pasture or grazing (no. of farms)	38	-34	-40.9	-19	-47.3	-36.8	3	-18.1	-27.8	-17.2
<b>Tenure of Principal Operator</b>										
Full owners	91.87%	84.11%	93.63%	86.83%	90.30%	93.65%	78.66%	89.34%	93.40%	89.04%
Part owners	1.88%	7.95%	1.59%	6.37%	4.35%	1.98%	7.31%	3.21%	3.63%	10.17%
Tenants	6.25%	7.95%	4.78%	6.80%	5.35%	4.37%	14.03%	7.45%	2.97%	0.79%
<b>Workers in farm (decline since 2010)</b>										
hired farm workers (number)	-7.6	-53.7	-42.3	-1.4	-21.1	-42	-41.1	-35	-15	1.6
agregados and sharecroppers	22.3	-27.9	-61.8	-13.6	-10.4	-30.4	4.3	-26.2	-52.5	10.2



The total number of farms in the territory declined by 16.4 percent, while the number of cuerdas increased by 4.9 percent. Almost the entire coffee region, however, experienced more decline than the national average. Decline rates for the number of farms in these municipios range between 13.2 percent (Lares) and 41.2 (Yauco). The total number of farms for harvest declined by 5.5 percent nationally, while land for pasture and grazing declined by an average of 17.2 percent.

The majority of the principal operators, an average of 71.15 percent nationally, have full ownership of the farms, while tenants represent less than 1 percent. Part owners represent one tenth of the total number of principal operators. While these last two proportions may vary across the coffee region, full owners still represent the majority of principal operators in these municipios, constituting between 78 and 93 percent of the total number.

The number of farm workers hired at the national level between 2010 and 2017 increased by 1.6 percent, while agregados and sharecroppers increased by 10.2 percent. The coffee region did not see the increase, as hired farm workers declined between 1.4 (Lares) and 53.7 percent (Ciales). Agregados and sharecroppers declined in 7 out of the 9 selected municipios, while seeing an increase in the remaining 2 municipios.

**Distribution of Principal Operators by Sex**

	2007			2012		
	Male	Female	N/A	Male	Female	N/A
<b>Adjuntas</b>	81.05%	11.01%	7.94%	90.06%	1.51%	8.43%
<b>Ciales</b>	80.04%	14.79%	5.18%	86.30%	2.47%	11.23%
<b>Jayuya</b>	79.80%	12.72%	7.48%	89.17%	4.46%	6.37%
<b>Lares</b>	83.79%	10.68%	5.53%	91.17%	7.53%	1.30%
<b>Las Marias</b>	78.71%	10.89%	10.40%	90.30%	4.68%	5.02%
<b>Maricao</b>	84.39%	11.30%	4.32%	87.30%	3.17%	9.52%
<b>Orocovis</b>	79.71%	10.95%	9.34%	88.34%	1.78%	9.88%
<b>Utua</b>	81.35%	11.62%	7.03%	84.09%	3.55%	12.35%

<b>Yauco</b>	80.78%	7.18%	12.04%	88.45%	11.55%	0.00%
<b>Puerto Rico</b>	85.56%	8.94%	5.50%	91.69%	4.76%	3.54%

There is significant disparity in the operation of farms between males and females. The former operate over three quarters of all farms in the island. On top of this historical disparity, most of the municipios experienced an increase in the total number of farms being operated by male between 2007 and 2017. In 2007, women operated 8.94 percent of farms. By 2012, they operated only 4.76 percent of the total.

<b>Market Value of Agricultural Products (Change between 2007 and 2012, in %)</b>					
	<b>Agricultural products sold</b>	<b>Crops sold</b>	<b>Coffee</b>	<b>Other farm related sources</b>	<b>Cuerdas of Coffee harvested for sale</b>
<b>Adjuntas</b>	11.2	7.5	0.02	72.8	18.6
<b>Ciales</b>	-25.8	-23.7	-58	-26.7	-35.2
<b>Jayuya</b>	-35.8	-34.5	-40.5	-34	-34.1
<b>Lares</b>	7.9	12	-20.1	53.6	-18.4
<b>Las Marias</b>	-10.7	-8.9	-37.9	127.4	-31.4
<b>Maricao</b>	-	-	-56.8	-0.8	-45
<b>Orocovis</b>	-15.4	-10.7	-57.6	-0.6	-42.4
<b>Utua</b>	-5.64	-2.81	-39.56	-1.29	-31.73
<b>Yauco</b>	0.3	-4.3	-34.3	-18	-5.3
<b>Puerto Rico</b>	6.2	24	-30	24.1	-13.8

Most of the coffee region experienced decline in the total amount of agricultural products sold, with the exception of Adjuntas and Lares, which is not indicated by the overall increase in the country (6.2 percent). Coffee revenues also declined significantly, more than the national average (30.0 percent), in most of the selected municipios. Not surprisingly, the proportion of coffee in cuerdas also declined significantly throughout the region. Revenues from other farm related sources increased by an average of 24.1 percent in the island, while experiencing different patterns across the coffee region. Overall, agricultural production in the country has fell sharply from 2007 values, indicating the need for improvement in the agriculture sector as a whole.

### **Policy Implications and Recommendations**

The conditions of the coffee region call for new strategies and approaches to achieve economic growth. Agriculture and coffee hold significant potential to achieve this goal, and offer vulnerable communities pathways to overcome conditions of poverty. There is an urgent need for collaborative approaches including government, non-profit actors, civil society organizations, and these communities, to find solutions to the increasing challenges posed by climate change. In addition, a gender perspective needs to be incorporated, to ensure equitable conditions for all members within the community. Recommendations for further actions include:

- Increased investment in primary sector activities, such as coffee production
- Investing in agricultural technologies and infrastructure, to achieve higher levels of production
- Eliminating barriers for women in access to agricultural resources, financial services, and labor markets
- Facilitating the participation of women and youth in rural labor markets
- Development of youth empowerment initiatives and job training to incorporate youth to labor force

## References

- Bamber, Penny & Fernandez-Stark, Karina. (2013). *Global Value Chains, Economic Upgrading and Gender: The Horticulture Industry*.
- Brown, P., Vega, C. M. V., Murphy, C. B., Welton, M., Torres, H., Rosario, Z., ... & Meeker, J. D. (2018). Hurricanes and the Environmental Justice Island: Irma and Maria in Puerto Rico. *Environmental Justice*, 11(4), 148-153.
- Caron, C. and Borges-Mendez, R. (2018). *I Decolonizing Resilience: The case of reconstructing the coffee region of Puerto Rico after Hurricanes Irma and Maria*.
- Collins, S. M., Bosworth, B. P., & Soto-Class, M. A. (Eds.). (2007). *Restoring growth in Puerto Rico: Overview and policy options*. Brookings Institution Press.
- Dietz, J. L. (1987). *Economic history of Puerto Rico: institutional change and capitalist development*. Princeton University Press.
- Fain, S. J., Quiñones, M., Álvarez-Berrios, N. L., Parés-Ramos, I. K., & Gould, W. A. (2018). Climate change and coffee: assessing vulnerability by modeling future climate suitability in the Caribbean island of Puerto Rico. *Climatic Change*, 146(1-2), 175-186.
- Gould, W. A., Fain, S. J., Pares, I. K., McGinley, K., Perry, A., & Steele, R. (2015). Caribbean regional climate sub hub assessment of climate change vulnerability and adaptation and mitigation strategies. *United States Department of Agriculture*, 67.
- International Labour Organization. (2010). *Gender Mainstreaming in Local Economic Development Strategies : A guide*. Retrieved from [https://www.ilo.org/empent/Publications/WCMS\\_141223/lang--en/index.htm](https://www.ilo.org/empent/Publications/WCMS_141223/lang--en/index.htm)
- International Labour Organization. (2017). *Promoting Decent Work for Rural Workers at the Base of the Supply Chain*.

International Labour Organization. (2018). *Wages and working conditions in and out of global supply chains: A comparative empirical review*.

Page-Hoongrajok, A., Chakraborty, S., & Pollin, R. (2017). Austerity Versus Green Growth for Puerto Rico. *Challenge*, 60(6), 543-573.

Quisumbing, A. R., Meinzen-Dick, R., Raney, T. L., Croppenstedt, A., Behrman, J. A., & Peterman, A. (2014). Closing the knowledge gap on gender in agriculture. In *Gender in agriculture* (pp. 3-27). Springer, Dordrecht.

Staritz, C., & Reis, J. G. (2013). Global value chains, economic upgrading, and gender: Case studies of the horticulture, tourism, and call center industries.

U.S. Census Bureau (2017). *2012-2017 American Community Survey 5-year estimates*.

Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>

U.S. Census Bureau (2010). *2010 Census*. Retrieved from

<https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>

U.S. Census Bureau (2000). *2000 Census*. Retrieved from

<https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>

U.S. Department of Agriculture(2007). *2007 Census of Agriculture*. Retrieved from

<https://www.nass.usda.gov/AgCensus/>

U.S. Department of Agriculture(2007). *2007 Census of Agriculture*. Retrieved from

<https://www.nass.usda.gov/AgCensus/>

U.S. Department of Agriculture(2002). *2002 Census of Agriculture*. Retrieved from

<https://www.nass.usda.gov/AgCensus/>

United States Department of Agriculture. (2006). - Social Economic Profile Technical Guide –

ResearchGate. Retrieved from

[https://www.researchgate.net/profile/David\\_Seesholtz/publication/233935045\\_Social\\_Economic\\_Profile\\_Technical\\_Guide/links/0fcfd50d1e5f06b2dc000000/Social-Economic-Profile-Technical-Guide.pdf](https://www.researchgate.net/profile/David_Seesholtz/publication/233935045_Social_Economic_Profile_Technical_Guide/links/0fcfd50d1e5f06b2dc000000/Social-Economic-Profile-Technical-Guide.pdf)

Warren, A. C. (2010). Women's employment and changing gender relations in Puerto Rico. *Caribbean Studies*, 59-91.