

# Chapter 4

## The Socioeconomic Paradox of Galapagos

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### Introduction

The Galapagos Islands are an Ecuadorian province located in the Eastern Pacific Ocean about 1,000 km off the mainland of Ecuador. The Galapagos archipelago is composed of 13 large islands, 6 small islands, and 107 rocks and islets. These islands were made famous by Charles Darwin's theory of evolution by natural selection<sup>1</sup> and by the presence of numerous endemic species. The Galapagos Islands are called the "Enchanted Islands," because of their unique flora and fauna, which are almost impossible to replicate in other regions around the globe.

The Galapagos Islands are an inspiration for research in social and ecological sciences (Tapia et al. 2009).<sup>2</sup> There has been very little social science research conducted in the islands compared to the enormous amount of natural sciences research. This paucity of research on the human dimension in the Galapagos Islands has contributed to a general lack of understanding about the links between natural and human ecosystems. The goal of this chapter is to provide supporting evidence for the increasing importance of social processes in shaping the Galapagos Islands and altering the

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<sup>1</sup> In 1859, Charles Darwin published his theory of evolution by natural selection as an explanation for adaptation and speciation. He defined natural selection as the "principle by which each slight variation [of a trait], if useful, is preserved." The concept was simple but powerful: individuals that are best adapted to their environments are more likely to survive and reproduce. As long as there is some variation between individuals, there will be an inevitable selection with the most advantageous variations. If the variations are inherited, then differential reproductive success will lead to a progressive evolution of particular populations of a species, and populations that evolve to be sufficiently different eventually will become different species.

<sup>2</sup> Tapia W, Ospina P, Quiroga D, Gonzalez JA, Montes C (2009) Science for Galapagos: a proposed strategy and priority research agenda for sustainability of the archipelago. Quito, Ecuador. [http://www.galapagospark.org/documentos/Ciencia\\_para\\_la\\_sostenibilidad\\_Tapia\\_et\\_al\\_2009.pdf](http://www.galapagospark.org/documentos/Ciencia_para_la_sostenibilidad_Tapia_et_al_2009.pdf)

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integrity of natural ecosystems, thereby challenging the conservation paradigms in the “Enchanted Islands.” Empirically, we present transversal statistics to expose the paradox of sustainability in Galapagos. Sustainability is understood as an integrated notion between human needs, satisfying their needs without compromising the needs of future generations (World Commission on Environment and Development 1987). We label this situation as a paradox, due to the contraposition between the exits of the present and future problems and the needs of its present population. The principal aim is to prove the paradox of Galapagos: a healthy place to live where the only way to preserve it is to cut the present health. The arguments for an explicit human–environment discourse in the Galapagos Islands are divided into four sections that contain statistical data and demographic analysis: (1) demographic, (2) socioeconomic, (3) health, and (4) conclusions.

## Demographic Analysis

The population growth in Galapagos is becoming untenable. According to the last population census in 2010, there were 25,124 inhabitants of the Galapagos Islands. The intercensal growth rate is 3.32%, with a density of 80 persons per km<sup>2</sup>. In Ecuador, the growth rate is 1.95% with a density of 56 persons per km<sup>2</sup>. Figure 4.1 shows the population evolution on the islands compared with the entire country.

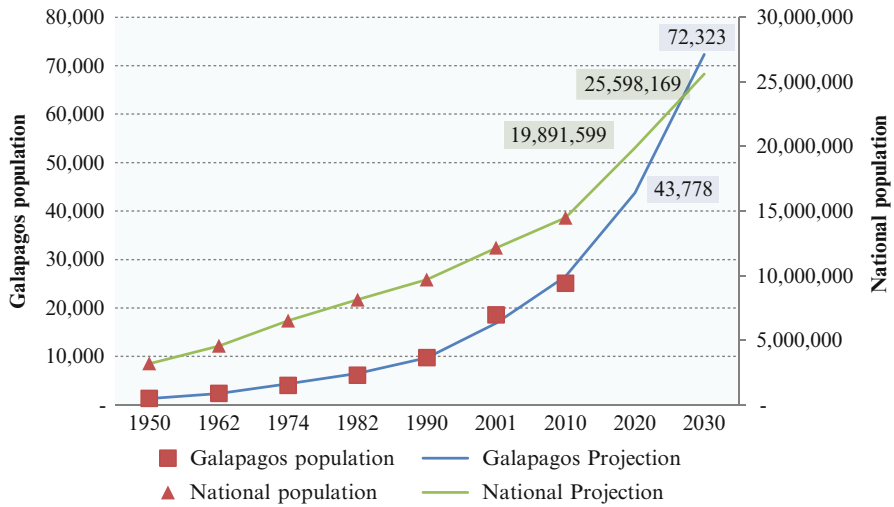
Galapagos has a territory of 8,010 km<sup>2</sup>, where 3.3% is available for human activity and the remaining 96.7% is under the jurisdiction of the Galapagos National Park (2011) and is reserved for the natural ecosystems of the islands. The residential population of Galapagos is principally located on three islands: Santa Cruz, San Cristobal, and Isabela. Table 4.1 shows the population structure, according to municipalities and parroquias (parishes).

Population immigration is the central factor that describes the demography of the archipelago. According to the 2010 census, nearly 60% of the residential population in the Galapagos was born outside of the province, a trend observed over the previous 20 years (Table 4.2).

The immigration problem is related to the informality of the current process of accepting new workers into the islands. Official reports show that local government is increasingly granting residency status. The only way to formalize legal permanence in the Galapagos is to obtain residency, which allows a person to work, study, and use all local services. Before the *Special Law for Galapagos* was issued in 1998,<sup>3</sup> local governments did not have a proper registration system for permanent residents, there was no official process to obtain residence cards and several political and administrative problems existed. It is likely that fraudulent mechanisms were used to facilitate granting permanent residency to people who did not meet legal requirements. The problem still exists as, while the local government has improved the planning, control, and registration of actual and future residents, there

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<sup>3</sup> This law seeks to regulate the Special Regime for Galapagos and to regulate the legal and administrative elements <http://www.ambiente.gob.ec/proyectos/userfiles/51/file/turismo/ley%20galapagos.pdf>.



**Fig. 4.1** National and Galapagos population projects (INEC, Population and housing census, 2010a)

**Table 4.1** Population distribution in the Galapagos Islands (INEC, Population and housing census, 2010a)

Municipality	Parroquias	Population	% Distribution
San Cristobal	Puerto Baquerizo Moreno	6,672	26.6
	El Progreso	658	2.6
	Isla Santa Maria (Floreana)	145	0.6
	Total	7,475	29.8
Isabela	Puerto Villamil	2,092	8.3
	Tomas De Berlanga	164	0.7
	Total	2,256	9.0
Santa Cruz	Puerto Ayora	11,974	47.7
	Bellavista	2,425	9.7
	Santa Rosa	994	4.0
	Total	15,393	61.3
Galapagos	Total	25,124	100.0

**Table 4.2** Structure of the population in the Galapagos Islands (INEC, Population and housing census, 2010a)

Census	Born in Galapagos (%)	Born outside (%)
1990	35.7	55.4
2001	34.5	60.6
2010	34.6	59.5

is a lack of confidence about the correctness of past records and the way to validate previous actions (Vanguardia 2012).<sup>4</sup>

The actual number of migrants is uncertain. Using the last census (2010), the population can be characterized using internal migration variables.<sup>5</sup> This classification can be used to identify the proportion of recent and old migrants. Out of 21,077 inhabitants,<sup>6</sup> 49.3% are old migrants (i.e., people born outside of the Galapagos but classified as “habitual” residents of the islands for more than 5 years); 11.3% are recent migrants (i.e., people born in the Galapagos, but not self-classified as “habitual” residents of the islands, having immigrated to the Galapagos during the last 5 years, 2005–2010); 3.7% are multiple migrants (i.e., people born outside of the Galapagos but who have not self-declared “habitual” residence in the islands); 1.4% are returning migrants (i.e., people born in the Galapagos and declaring the islands as their “habitual” residence, but not in the last 5 years, 2005–2010); and 34.2% are not migrants (Table 4.3).

Additional quantitative evidence of the immigration problem in the Galapagos Islands comes from marriage and divorce statistics. Both variables show a considerable incremental increase between the years 2007 and 2010: marriages increased 511%, from 38 to 232 marriages per year, and divorces increased from 0 to 64 divorces per year (Fig. 4.2). Migrants may be getting married illegally in order to obtain legal status in the islands.<sup>7</sup>

The internal population is not growing at the same rate as immigration. In the Galapagos, births decreased between 2001 and 2010, as the birth rate decreased from 22.7 births per 1,000 inhabitants to 14.1 per 1,000 inhabitants, while the mortality rate slightly increased: 1.6 deaths per 1,000 inhabitants in 2001 compared to 1.8 deaths per 1,000 inhabitants in 2010.<sup>8</sup> Additionally, according to the 2009 Life Condition Survey (2009a),<sup>9</sup> the proportion of pregnant women in the Galapagos was lower than in the whole of Ecuador: 5.7% compared to 6.9%.

Tourism is the apparent driving force behind population growth in the Galapagos Islands, likely pulling new migrants to the islands as well. As the number of foreign and national tourists increases, tourism has become the islands’ main economic activity. The flow of tourists in the past decade has drastically increased. Between 2001 and 2011, the total number of tourists increased 138.5%, from 77,570 to 185,028 and—if the number of tourists who came to Galapagos in 1979 is compared—the increase is from 11,765 to 185,028, which represents an increase of 1,472.7% (Fig. 4.3). The correlation between tourists and the population is 0.97.

<sup>4</sup> Vanguardia (2012) The Galapagos Report

<sup>5</sup> It is based on the methodology proposed by CELADE to characterize internal migration. This procedure is an international standard for characterizing internal movements.

<sup>6</sup> For methodology, we remove foreigners from the people registered in the census, resulting in 21,077 inhabitants.

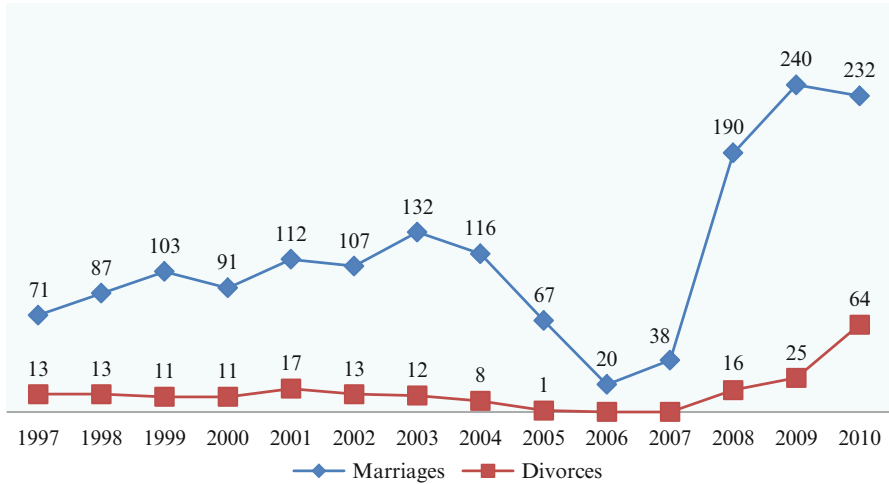
<sup>7</sup> According to Article 26, paragraph 2 of the Special Law for Galapagos Province, the following are permanent residents: “The Ecuadorians or foreigners, who have legalized their stay in the country, maintain spousal or de facto union recognized under the Act or the children of a permanent resident in the province of Galapagos.”

<sup>8</sup> National Institute of Statistics and Censuses (2010) Yearbook of vital statistics

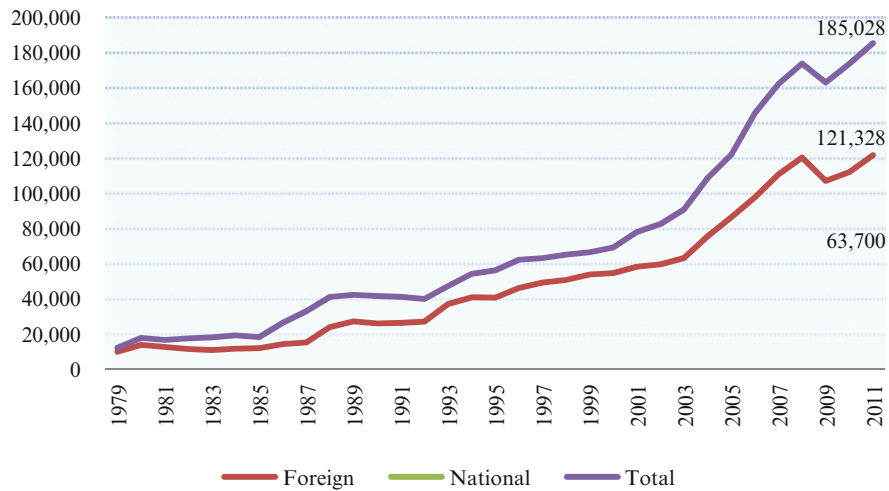
<sup>9</sup> The survey was implemented on mainland Ecuador in 2005–2006 and in the Galapagos Islands in 2009.

**Table 4.3** Characterization of immigrants to the Galapagos Islands [Latin American and Caribbean Demographic Center (CELADE), 2010]

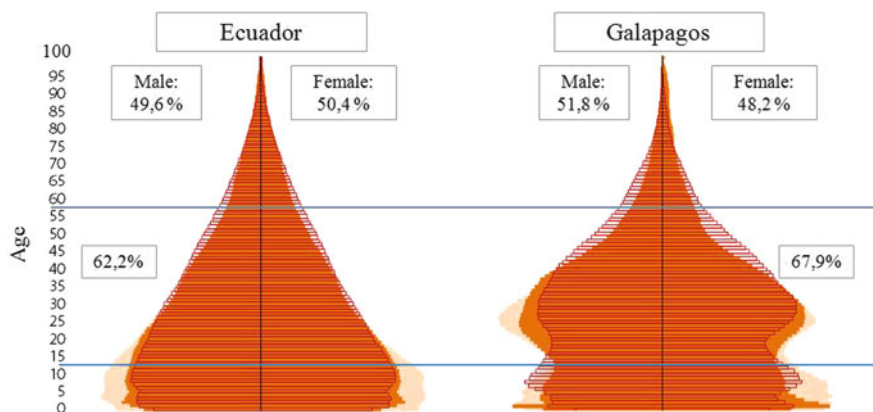
	Old migrants	Recent migrants	Multiple migrants	Return migrants	Not migrants
Born in Galapagos	No	Yes	No	Yes	Yes
Habitual resident of Galapagos	Yes	No	No	Yes	Yes
Habitual resident of Galapagos in the last 5 years, 2005–2010	Yes	Yes	No	No	Yes



**Fig. 4.2** Evolution of marriages and divorces in the Galapagos Islands (INEC, Yearbook of vital statistics, 2010d)



**Fig. 4.3** Historical number of visitors who entered the protected areas of the Galapagos Islands, 1979 through 2011 (Galapagos National Park, 2012)



**Fig. 4.4** Population pyramids for Ecuador and the Galapagos Islands showing differences in their sex and age structures (INEC, Population and housing census, 2010a)

**Table 4.4** Population characteristics by place of birth (INEC, Population and housing census, 2010a)

Variables	Galapagos			
	Born in Galapagos	Born in other provinces	Foreign-born	Ecuador
Average age	22	28	31	28
Men (%)	50.7%	49.6%	51.0%	49.6%
People of Working age (%)	48.5%	50.7%	59.5%	43.1%
Average household size	3.7	3.8	3.4	3.8
Single people (%)	45.8%	36.5%	30.5%	36.5%
People without any education <sup>a</sup> (%)	0.8%	5.0%	3.8%	5.0%

<sup>a</sup>Refers to persons who at the time of the survey reported “none” when asked about the peak level of education attained

Demographically, there is a significant difference in the age structure in the Galapagos Islands. The population pyramid of Ecuador and the population pyramid of Galapagos show striking differences (Fig. 4.4). This variation is likely related to Ecuadorian migration to the Galapagos Islands from the mainland, taking into consideration that the first regulation limiting the entry of new migrants into the Galapagos was only established in 1998. According to the 2010 population census, 67.9% of the population of Galapagos was of working age (between 15 and 65 years old), and only 4.4% of the population was over 65 years old.

The population currently living in the Galapagos that was born outside of the islands is generally quite young, with an average age greater than the native population. People born in Galapagos have better educational conditions than others who come to the islands from the Ecuadorian mainland (Table 4.4).

In this first section, we have reported statistics on the demographic characteristics of the population in the Galapagos Islands. It is important to highlight that the growth of the total population in the Galapagos was motivated by migration as a principal component and its relationship to tourist activities. In the next section, we will describe socioeconomic conditions in the Galapagos Islands.

## Socioeconomic Analysis

New migrants are motivated by positive socioeconomic conditions in the Galapagos. Job opportunities, particularly in tourism, create the need for services, which, in turn, encourages more displacements and attracts more and more people to the islands (World Wildlife 2003).<sup>10</sup> Compared to the mainland of Ecuador, Galapagos has attractive employment conditions, such as higher incomes, greater access to technology and higher education, and greater gender equity as “pull” factors. To migrate to the Galapagos, people have to confront the *Galapagos Paradox*. The Galapagos has “push” factors as well—a poor educational infrastructure, lack of basic services, violence against women, and relatively high prices for basic food and services. Here, we describe favorable and unfavorable socioeconomic conditions in the islands as “pull” and “push” factors of population migration to the islands.

### *Favorable Socioeconomic Conditions in the Galapagos*

If you live in the Galapagos, it is much easier to find a job, than if you live on the mainland of Ecuador. In 2009, the unemployment rate for Galapagos was 4.9%, while on the mainland of Ecuador the rate was 7.9%. The subemployment was 38.7%, while on the mainland of Ecuador the rate was 50.5%. The fully employed rate in the Galapagos was 64.7%, while on the mainland of Ecuador the rate was 38.8%. An additional consideration is the size of the labor market. According to the 2010 population census, the “economically active population” in the Galapagos was 12,975 persons (i.e., 51.6% of the total population), while on the mainland of Ecuador the “economically active population” was 6,093,173 persons (i.e., 42.1% of the total population). Additionally, the labor market in the Galapagos, as compared to the mainland of Ecuador, has a higher economic participation (i.e., 70.3% versus 67.7%).

In addition, a job in the Galapagos, generally, has higher wages. For instance, any person employed in the public sector in the Galapagos receives double the

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<sup>10</sup> World Wildlife Fund (2003) Migration and environment in the Galapagos Islands. Quito, Ecuador

**Table 4.5** Market labor structure by economic activity (INEC, Population and housing census, 2010a)

Economic activity	Ecuador (%)	Galapagos (%)
Wholesale and retail	18.4	12.8
Public administration and defense	4.1	10.7
Hosting activities and food service	3.8	9.5
Agriculture, livestock, forestry, and fishing	21.8	9.0
Construction	6.5	7.5
Transport and storage	5.2	7.0
Administrative and support services	2.7	7.0
Teaching	5.1	5.6
Manufacturing industries	10.2	5.1
Other activities	22.1	25.8
Total	100.0	100.0

**Table 4.6** Economic activity by sector (INEC, National economic census, 2010b)

Economic activity	Mainland Ecuador		Galapagos	
	Business	%	Business	%
Wholesale and retail trade	269,751	53.9	545	41.6
Hosting and food service	51,815	10.4	247	18.9
Other service activities	39,631	7.9	105	8.0
Manufacturing	47,867	9.6	89	6.8
Public administration and defense	4,009	0.8	54	4.1
Transport and storage	5,228	1.0	51	3.9
Information and communication	19,761	4.0	41	3.1
Other activities	62,155	12.4	177	13.5

basic salary of a person living on mainland Ecuador.<sup>11</sup> This means that in the public sector the minimum wage on the Ecuadorian mainland is \$292.00/month (in 2010), but in the Galapagos it is \$584.00/month. Moreover, 10.7% of people work in the public sector, a much higher percentage than on the Ecuadorian mainland, where only 4.1% work in the public sector. Favorable economic conditions in the Galapagos Islands are present also in the private sector. According to the Life Condition Survey, conducted in 2009, the average monthly income for public and private workers in Galapagos was \$772.03/month, whereas on the Ecuadorian mainland it was \$251.70/month.

The structure of the labor market in the Galapagos is strongly related to tourist activities. Table 4.5 shows the structure of the market and the importance of tourism relative to other typical jobs in wholesale and retail, hosting activities and food services, transport and storage, and construction.

The market has benefited from the quantity of business per 1000 inhabitants. According to the last economic census (2010), in Galapagos there were 52.9 businesses per 1000 inhabitants, while on the mainland of Ecuador there were 35.3 businesses per 1000 inhabitants. Table 4.6 shows the number of businesses by economic activity sector.

<sup>11</sup> According to the Special Law for the Conservation and Sustainable Development of the Province of Galapagos issued on 1998 and reformed on 2003, "The minimum wage, minimum sectorial or basic wage of the province of Galapagos in each category consist of the sum of the minimum basic wage and minimum sectorial wage salary in continent plus 100% increase."



**Table 4.7** Access to information and communication technologies (INEC, Population and housing census, 2010a)

ICT access	Ecuador (%)	Galapagos (%)
Conventional telephone	33.4	68.7
Cell phone	76.3	92.1
Internet	13.0	18.3
Computer	26.3	46.4
Pay TV	17.5	33.2

**Table 4.8** Poverty disparities: mainland Ecuador and the Galapagos Islands (INEC, Population and housing census, 2010a)

Poverty	Ecuador (%)	Galapagos (%)
Unsatisfied basic needs, poverty (households)	56.2	47.6

A healthy labor market generates better connectivity (in terms of communications) and reduces poverty. In the Galapagos, there are proportionally fewer people living in poverty and very high communications connectivity. Compared to the Ecuadorian mainland, Galapagos is the best place for connections for households and businesses: 92.11% of households have at least one active cell phone, whereas 76.28% of households on the Ecuadorian mainland have at least one active cell phone; in the Galapagos 18.33% of households have Internet access, while on the Ecuadorian mainland 13.33% of businesses have Internet access. According to the 2010 National Economic Census, 21.9% of businesses in Galapagos use the Internet in their activities, while on the Ecuadorian mainland the rate is 11% (Table 4.7). Galapagos has fewer people living in poverty than does mainland Ecuador (Table 4.8).

### *Unfavorable Socioeconomic Conditions of Galapagos*

Unfortunately, the socioeconomic scenario is not perfect for residents of the Galapagos. The healthy labor market with high incomes also causes high commodity prices and, in the Galapagos, there are severe problems with access to basic services. The classic statistic to evaluate the average cost of life is the “cost of basic basket,” i.e., goods and services needed to satisfy basic needs, which is composed of 75 fundamental goods for a typical family life. Table 4.9 shows the difference between the “basket” in the Galapagos and the same products on the Ecuadorian mainland.

In the Galapagos Islands, higher education levels occur as compared to mainland Ecuador,<sup>12</sup> although there are severe problems with education costs and infrastructure.

<sup>12</sup> According to the 2010 census, Galapagos has a lower illiteracy rate (1.3%) than mainland Ecuador (6.8%). The average number of years spent in school is 11.9 years in the Galapagos, whereas on the Ecuadorian mainland the average is reported to be 9.6 years.

**Table 4.9** Average “cost of basic basket” in US dollars (INEC, Consumer price index for Galapagos, 2010c)

Date	Ecuador (\$)	Galapagos (\$)	Difference (\$)
April 2009	522.76	835.32	312.56
May 2009	522.75	839.61	316.86
June 2009	522.38	843.00	320.62
July 2009	521.73	844.86	323.13
August 2009	519.30	847.30	328.00
September 2009	521.26	841.30	320.04
October 2009	522.34	861.60	339.26
November 2009	522.59	860.83	338.24
December 2009	528.90	862.64	333.74
January 2010	534.33	865.11	330.78
February 2010	535.48	868.74	333.26
March 2010	535.56	868.98	333.42

**Table 4.10** Average cost of education in Ecuador and the Galapagos Islands (INEC, Living conditions survey, 2009a)

Educational expenses	Ecuador (2005–2006) (\$)	Galapagos (2009) (\$)
Enrollment	61.95	256.47
Uniforms	36.10	64.74
Textbooks and school supplies	48.47	68.50
Monthly tuition	45.28	72.87
School materials	7.73	13.29
School transport	19.74	21.08
Others	6.69	14.45

Using the 2009 Life Condition Survey of Galapagos, we can compare differences between educational expenses in the Galapagos and on the Ecuadorian mainland. In some cases, expenditures are more than 200% higher in the Galapagos as compared to the mainland (Table 4.10).

It is important to note that in Galapagos, one of every ten students (10%) is enrolled in distance learning, while on the Ecuadorian mainland, this proportion is minimal (1.1%). This phenomenon is likely caused by the relatively low educational opportunities in the Galapagos, especially for higher education (Table 4.11). There are no main campuses, only extensions that have their headquarters on the mainland.

Galapagos presents a difficult situation in terms of basic services. Despite the physical limitations of the islands, during the last 10 years, the Galapagos experienced an increase in the number of housing units (68.7%), which is twice the national increase of 34.7%. In terms of basic services, Galapagos showed significant deficits, particularly in the potable water network coverage and sewer service: in 2001 only 30.8% of homes had network sewer service and by 2010 this proportion was reduced to 26.8%. On the Ecuadorian mainland, 48% of

**Table 4.11** Types of educational establishments (INEC, National economic census, 2010b)

Activity of the establishment	Ecuador		Galapagos	
	Total establish.	Establish. per 1,000 inhabitants	Total establish.	Establish. per 1,000 inhabitants
Preprimary and primary education	8,144	0.56	13	0.52
Secondary general education	1,903	0.13	9	0.36
Technical and professional education	497	0.03	–	0.00
Undergraduate education	547	0.04	4	0.16
Sports and recreation education	305	0.02	1	0.04
Cultural education	454	0.03	–	0.00
Other education	1,048	0.07	2	0.08
Support activities for education	183	0.01	1	0.04

homes had network sewer service in 2001 and 53.6% in 2010. These conditions are even worse on Santa Cruz, an island that has 61.3% of the total population of the archipelago, with a sewage system that only includes 3.5% of the households.

Finally, it is necessary to analyze the situation of women in the Galapagos: women in 2010 accounted for 42.8% of the total population, and illiteracy among women was 1.6% compared to men living in the Galapagos (0.6%) and women on the Ecuadorian mainland (7.7%).

In 2010, the average length of time women in Galapagos had gone to school was 12.1 years, which was greater than men (11.7 years) and substantially higher than the average for women on the Ecuadorian mainland (9.5 years). In the two previous censuses, the average time spent in school in the Galapagos was lower (8.13 years in 2001 and 8.32 years in 1990). Table 4.12 compares the education level of women in the Galapagos and on mainland Ecuador.

Women's increased access to education is reflected in their participation in the labor market. In 2010, the "economically active population" in the Galapagos was 12,975, of which 52.1% was composed of women, compared to 38.44% on the Ecuadorian mainland. According to the National Economic Census (2010b), 50.3% of establishments in Galapagos are owned or managed by women, as compared to 48.4% on the Ecuadorian mainland (Table 4.13).

Despite progress in reducing gender inequality in Galapagos, there is a disturbing presence of violence against women in the islands: 55.3% of women have suffered some kind of violence, and 43.3% have been victims of violence in a relationship. In terms of the type of violence, 35.3% of women have been physically abused; 49.9% suffered psychological violence; 22.8% reported being victims of

**Table 4.12** Education level of women in the Galapagos and on mainland Ecuador (INEC, Population and housing census, 2010a)

Education level	Mainland (%)	Galapagos (%)
None	5.6	1.5
Literacy center	1.0	0.4
Preschool	1.1	0.7
Primary	34.3	24.6
Secondary	22.9	24.2
Basic education	9.1	8.4
Bachelor	7.2	11.2
Post bachelor cycle	1.1	2.0
Undergraduate	14.2	19.6
Postgraduate	1.0	2.1
Undeclared	2.5	5.3
Total	100.0	100.0

**Table 4.13** Participation of women in the labor market (INEC, Population and housing census, 2010a)

Gender	1990		2001		2010	
	Number	%	Number	%	Number	%
Men	3,557	59.6	6,170	70.4	7,848	60.5
Women	2,412	40.4	2,598	29.6	5,127	39.5
Total	5,969	100.0	8,768	100.0	12,975	100.0

sexual violence; and 33.0% have suffered patrimonial or economic violence (National Institute of Statistics and Censuses 2011).<sup>13</sup>

## Health Situation Analysis

In general, people in the Galapagos are considered to be healthier than those on the Ecuadorian mainland, but there remains a limited availability of specialized health services on the islands to serve them. For many people, it is necessary to travel to the mainland (spending additional money and time) to resolve routine or complex health needs.

Using the 2009 Life Condition Survey of Galapagos, basic indicators relate to vaccines for children under 5 years old: Pentavac vaccine has 29.5% more coverage than on the Ecuadorian mainland; the SRP vaccine has 16.2% more coverage than on the Ecuadorian mainland; and chronic (height versus age), global (weight versus age), and acute (weight versus height) malnutrition have 6.3, 6.8, and 0.7%,

<sup>13</sup> National Institute of Statistics and Censuses (2011) National survey of family relationships and violence against women

respectively, less incidence in the Galapagos than on the Ecuadorian mainland (Table 4.14).

Another group being studied is the women of childbearing age (WCA). In this case, it is possible to identify more coverage in the Galapagos Islands for tetanus and rubella vaccinations, more *Papanicolaou* (Pap) exams, and more knowledge of family planning methods (Table 4.15).

According to the 2010 census, structural health indicators are relatively high in the Galapagos as compared to the Ecuadorian mainland. For instance, a greater proportion of people subscribe to social security, particularly in the private and public sectors (Table 4.16).

Additionally, there is more assistance for childcare systems in Galapagos (19.8%), as compared to the Ecuadorian mainland (13.20%). In particular, in Galapagos the private system of childcare seems to take the place of religious (church) and NGO childcare (Table 4.17).

Despite this positive scenario, there are deficiencies in responding to specialized needs and health emergencies in the Galapagos, as there is a general lack of infrastructure for treating infectious diseases and for practicing oncology, dermatology, pediatrics, traumatology, psychiatry, and other services (Table 4.18).

Health care in the Galapagos is challenged by the limited availability of specialized services and the general lack of a diverse health services infrastructure (Table 4.19).

Finally, we present statistics related to pregnancy, showing the care provided on the Ecuadorian mainland and in the Galapagos. Table 4.20 shows the proportion of births in private and public institutions. As we can see, in the Galapagos a high proportion of mothers travel to the mainland to give birth (33%). This is one of the most important statistics that reveals the incompleteness of the islands' health system and shows the importance of having public health systems.

The basic question to ask about the health situation in Galapagos is how sustainable is it? In a place where favorable health conditions exist, but where the demand for more specialized services is growing with the population, can services become compatible with the demands and needs of the population? Again, the intuitive solution would be to find a way to limit population growth, or the unsatisfied needs of the actual population will continue, especially for services related to aging.

## Conclusions

This chapter has summarized the demographic, socioeconomic, and public health situation in the Galapagos Islands, using the latest official Ecuadorian statistics. The data reveals the *Galapagos Paradox*: the Galapagos is a place with a healthy economy and good living conditions, but which has some major problems related to uncontrolled and unmeasured migration. While migration appears necessary for the tourism industry, which is very important for the economy in the Galapagos, the direct and indirect effects of the population increase will lead to severe problems in

**Table 4.14** Vaccine coverage for children under 5 years old (INEC, Living conditions survey, 2009a)

	Mainland (2005–2006) (%)	Galapagos (2009) (%)
BCG vaccine	98.3	99.0
Pentavalent vaccine	65.5	95.0
Polio vaccine	93.6	95.0
SRP vaccine	62.9	79.1
Chronic malnutrition	18.1	11.8
Global malnutrition	8.6	1.8
Acute malnutrition	1.7	1.0
Diarrhea presence	25.0	8.3
Respiratory diseases	56.0	45.3

**Table 4.15** Vaccine and health prevention coverage in women of childbearing age, i.e., between 12 and 49 years old (INEC, Living conditions survey, 2005–2006, 2009a)

	Ecuador (2005–2006) (%)	Galapagos (2009) (%)
Tetanus vaccine	86.1	96.0
Rubella vaccine	74.7	82.8
Papanicolaou examination	51.3	72.9
Knowledge about family planning	92.5	5.6

**Table 4.16** Social security coverage on the Ecuadorian mainland and Galapagos (INEC, Population and housing census, 2010a)

	Ecuador (%)	Galapagos (%)
Public social security	27.2	37.4
Private social security	9.4	17.9

**Table 4.17** Type of institution providing childcare (INEC, Living conditions survey, 2006–2006, 2009a)

	Ecuador (2005–2006) (%)	Galapagos (2009) (%)
Public	78.1	76.2
Private	13.4	23.8
Church/NGO's	8.5	0.0

the future, with regard to people's well-being and quality of life. In the last two decades, the growth of the migrant population has been aided by the presence of a poor registration system and a too informal process of granting residence cards. The sustainability of the system depends on controlling these problems.

**Table 4.18** Morbidity by type of establishment (INEC, Annual hospital discharge, 2009b)

Establishment	Ecuador		Galapagos	
	Frequency	%	Frequency	%
Total	1,090,263	100.00	1,938	100.00
Basic hospital	177,977	16.32	858	44.27
General hospital	370,238	33.96	797	41.12
General clinic (no specialized) (private)	237,493	21.78	126	6.50
Pediatric hospital	66,961	6.14	71	3.66
Specialized hospital	106,262	9.75	44	2.27
Obstetrics and gynecology hospital	87,369	8.01	20	1.03
Cancer hospital	21,239	1.95	9	0.46
Hospital for infectious diseases	2,824	0.26	7	0.36
Psychiatric hospital and sanatorium of alcoholics	3,123	0.29	3	0.15
Obstetrics and gynecology clinic	11,298	1.04	2	0.10
Pneumological hospital	2,177	0.20	1	0.05
Dermatological hospital	298	0.03	–	–
Geriatric hospital	1,954	0.18	–	–
Pediatric clinic	120	0.01	–	–
Trauma clinic	237	0.02	–	–
Psychiatry clinic	48	0.00	–	–
Other specialized clinics	645	0.06	–	–

**Table 4.19** Number of beds available by type of establishment (Yearbook of hospital beds, 2010e)

Establishment	Ecuador		Galapagos	
	Total available beds	%	Total available beds	%
Ministry of Public Health	8,484	35.67	30	100.00
Ministry of Justice and Police and Government	247	1.04	–	–
Ministry of National Defense	709	2.98	–	–
Social Security Institute	2,143	9.01	–	–
Other publics	160	0.67	–	–
Municipalities	170	0.71	–	–
Universities and polytechnics	146	0.61	–	–
Charity Board of Guayaquil	2,496	10.49	–	–
Society Against Cancer	560	2.35	–	–
Fisco Misionales	88	0.37	–	–
Private nonprofit	714	3.00	–	–
Private for-profit	7,867	33.08	–	–
Total	23,784	100.00	30	100.00

**Table 4.20** Point of care in birth assistance (INEC, Living conditions survey, 2006–2006, 2009a)

Point of care in the last birth assistance	Ecuador (2005–2006)		Galapagos (2009)	
	Frequency	%	Frequency	%
Hospital MSP <sup>a</sup>	603,424	44.30	1,394	68.00
Health center MSP	24,570	1.80	4	0.20
Health subcenter MSP	15,214	1.10	31	1.50
Hospital IESS	54,896	4.00	15	0.70
Health center IESS	3,948	0.30	0	0.00
Health subcenter IESS <sup>b</sup>	1,801	0.10	42	2.00
Hospital/PSJ/FFAA/ISSPOL <sup>c</sup>	–	–	60	2.90
Private hospital or private clinic	396,599	29.10	246	12.00
Private health center	21,537	1.60	123	6.00
Private practice	29,587	2.20	93	4.60
House midwife	11,367	0.80	0	0.00
Home	196,519	14.40	40	1.90
Other	1,362	0.10	0	0.00

<sup>a</sup>Ministry of Public Health

<sup>b</sup>Social Security Institute

<sup>c</sup>Police and Army Health and Social Security

People on the islands enjoy a good economic situation overall but, at the same time, they suffer from high prices, poor access to basic services, and deficiencies in health care and educational infrastructure. Galapagos has become an ideal setting for short-term migrants; a place to obtain money, but also a place to leave once that objective is achieved.

It is urgently necessary to have a public policy intervention in the islands. In this document, we discuss the context, but not the kind of policies that will be required to stem the flow of people and to create a sustainable social–ecological environment for the islands. It is necessary to decide upon one of two future paths: continue tourism growth and adapt to its consequences, or define specific limits for economic activities and rethink the living conditions of the actual habitants as well as tourists.

Further analysis should include specific metrics and sustainability models for the Galapagos to generate a public policy discourse about the future vision of the islands. We strongly recommend a multi-criteria analysis as a way to synthesize ecological and socioeconomic problems in a sensitive area without weighing or prioritizing any single dimension of development.

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