



→ Elva Marina Santander, teacher, walks around Gramalote (Norte de Santander) after the avalanche that swept through their village





↑ The Petro Ortiz family raises fighting cocks, a common activity in Cereté (Córdoba).

## CHAPTER 2

# POVERTY AND WEALTH CONDITIONS IN COLOMBIAN HOUSEHOLDS

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↑ Armando González, coffee picker in Santander.

## 2.1. INTRODUCTION

→ One of the primary objectives of public policy is to improve people's quality of life. In order to design programs and projects that effectively contribute to this end, it is essential to define what an adequate quality of life means and what the conditions of the population are compared to this definition. Poverty is one of the main aspects that determine quality of life. There are, however, various definitions of poverty and, consequently, different measurement methodologies to identify the population that meets this condition.

In Colombia different approaches for measuring poverty have been used, be it structural or transitory. The Unsatisfied Basic Needs Index (UBNI), which measures structural poverty, defines it as a condition where an individual cannot meet basic needs such as adequate nourishment, housing, utilities and infrastructure, and access to education or a source of autonomous income, among others. The more commonly used income approach relates to transitory poverty and identifies a minimum income with which a person could guarantee the consumption of a food basket that fulfills minimum caloric

requirements (i.e. extreme poverty threshold). The poverty threshold is obtained by including expenses in commodities or services besides foodstuffs requirements, also necessary to achieve an adequate living standard. When people have an income below one of these two lines, they are identified as extremely poor or poor.

This chapter describes the distribution of structural and transitory poverty of the population surveyed in ELCA. First, the monthly per capita expense, or average monthly expense per person (monthly household's expenses divided by the number of people from the household) is used to measure the ability of satisfying their basic needs (poverty threshold) and food needs (extreme poverty threshold). In the second place, a multidimensional wealth index is shown, that includes some of the household's socioeconomic conditions: access to public utilities, housing conditions, and some of the durable assets owned by the household members. Finally, a comparison between the wealth index and conventional indicators of the household's socioeconomic status (such as income and expenditure levels) is performed in order to demonstrate that, although this index only includes aspects related to structural poverty, it maintains a close relation to conventional monetary measures of transitory poverty. The wealth index here depicted therefore reflects the status and evolution of house-

hold welfare. In the following chapters of this book, this index will be used to examine, according to the household's socioeconomic level, the differences in the incidence and type of reaction to adverse effects, in the access and use of health services, in working conditions, in living conditions of infants and children, and in land possession in rural areas.

ELCA offers detailed information on labor and non-labor income for both the head of the household and his or her spouse. It also includes the aggregated income of all household members derived from labor, pensions, rent, interest, remittances, and subsidies, among others.



↑ Supply center in Bogotá (Corabastos)

## 2.2. HOUSEHOLDS LIVING IN POVERTY AND EXTREME POVERTY ACCORDING TO THE INCOME METHOD

ELCA offers detailed information on labor and non-labor income for both the head of the household and his or her spouse. It also includes the aggregated income of all household members derived from labor, pensions, rent, interest, remittances, and subsidies, among others. However, in order to calculate the household's expenditure and compare it to the extreme poverty and poverty thresholds, ELCA uses detailed information on frequent, quarterly and annual expenses. Therefore, the household expenditure per capita was calculated as an approximation to its socioeconomic level, thus reflecting its ability to access a set of goods and services. Table 2.1 shows the average monthly expenditure per capita for each region and each area where the survey was applied. Both Bogotá, in the urban area, and the Coffee Region, in the rural area, exhibit the highest level of average expenditure per capita, while the Atlantic region in the urban area and the Mid Atlantic region in the rural area present the lowest levels.

**TABLE 2.1.**  
MONTHLY EXPENDITURE PER CAPITA BY REGION (COP \$)

Urban sample		Rural sample	
Region	Monthly expense	Region	Monthly expense
Atlantic	195,554	Mid Atlantic	86,531
Eastern	279,287	Cundiboyacense	95,546
Central	250,502	Coffee Region	143,974
Pacific	263,052	East Central	90,373
Bogotá	392,290		
<b>Total</b>	<b>278,399</b>	<b>Total</b>	<b>98,839</b>

Source: Own calculations based on ELCA.

When per capita expenditure is compared with the extreme poverty and poverty thresholds, we find that the percentage of poor population is higher in rural areas. In 59.3% of urban households, income is beneath the poverty threshold, while 82.9% of rural households are beneath this threshold. A similar behavior is observed for the extreme poverty threshold<sup>1</sup> (Table 2.2).

**TABLE 2.2.**  
PERCENTAGE OF HOUSEHOLDS BENEATH THE EXTREME POVERTY AND POVERTY THRESHOLDS BY AREA

Area	Poverty	Extreme poverty
Urban	59.3	18.3
Rural	82.9	39.1

Source: Own calculations based on ELCA.

These results seem high when compared to the estimates presented by the Great Comprehensive Household Survey applied by the National Administrative Statistics Department (DANE —acronym for its name in Spanish), according to which 39.6% of the population living in the urban areas of the municipalities, 30.6% in 13 metropolitan areas (biggest cities), and 64.3% in the other areas live beneath the poverty line (extreme poverty percentages are: 12.4%, 7.1% and 29.1%, respectively)<sup>2</sup>. However, it is important to recall who makes up ELCA sample. On the one hand, the urban sample excludes households belonging to the highest socioeconomic levels (5 and 6), which are also those with highest income, and includes a higher proportion of population belonging to the lowest socioeconomic level (levels 1 and 2), which generally has the lowest incomes. Table 2.3 exhibits the average monthly per capita expenditure for the four socioeconomic levels in the urban area. On the other hand, the rural sample is made up of small landowners or households with access to small plots of land, regardless type of land tenure, that represent their main source of income and are generally dispersed throughout the rural area.

1. Extreme poverty and poverty thresholds correspond to those calculated by the National Planning Department (DNP for its acronym in Spanish) for 2009. These thresholds are different for each of the Great Comprehensive Household Survey territories: 13 metropolitan areas, urban areas of municipalities, and others.

2. Source: DNP. The numbers correspond to calculations by the Misión para el Empleo, Pobreza y Desigualdad (MESEP —acronym for its name in Spanish) for 2009

**TABLE 2.3.**  
MONTHLY EXPENDITURE IN THE URBAN AREA BY  
SOCIOECONOMIC LEVEL

Socioeconomic level	Number of surveyed households	Monthly expense per capita (COP\$)
1	1,440	154,574
2	2,190	224,512
3	1,533	333,279
4	285	621,636
<b>Total</b>	<b>5,448</b>	<b>278,399</b>

Source: Own calculations based on ELCA.

In Table 2.4 it is observed that in the urban sample the Atlantic region presents the highest percentage of poor households (73.1%) and extreme poverty households (31.7%) by region, while Bogotá shows a 35.6% of poor households and 5.8% of households in extreme poverty. In the rural area, the highest percentage of poor households is found in the East Central sub-region, where 87.6% of small homeowners are poor.



↑ Montezuma Campo family is composed of 28 people between grandparents, children and grandchildren who live in the same house in Barrancabermeja

**TABLE 2.4.**  
HOUSEHOLDS BELOW THE POVERTY AND  
EXTREME POVERTY THRESHOLDS BY AREA AND  
REGION (%)

Urban area		
Region	Poverty	Extreme poverty
Atlantic	73.1	31.7
Eastern	59.4	13.7
Central	69.4	22.4
Pacific	62.5	17.8
Bogotá	35.6	5.8
Rural area		
Region	Poverty	Extreme poverty
Mid Atlantic	84.9	40.8
Cundiboyacense	77.9	34.8
Coffee Region	76.9	25.7
East Central	87.6	51.9

Source: Own calculations based on ELCA.



↑ Myriam Diaz and her sister Consolación inherited the farm Saraza of Saboyá, that has been in their family since the early twentieth century



### 2.3. HOUSEHOLD SOCIOECONOMIC STATUS ACCORDING TO THE WEALTH INDEX

The wealth index that is shown in this section, and used throughout the book to portray the socioeconomic status of households, could be considered as an indicator of structural poverty. It was constructed using the principal component analysis (Filmer & Pritchett, 2001), which summarizes a set of variables related to the socioeconomic conditions of the households into an indicator intended to describe the level of household wealth on its various dimensions.

A total of 23 variables were used to construct the index and can be classified into three categories (Myas and Kumaranayake, 2006): six variables related to public utilities and infrastructure (sanitation services, water and sewage, electricity, etc.), three other related to housing conditions (flooring and wall materials, and number of bedrooms), and finally 18 indicators encompassing the ownership and use of some durable assets (for example, refrigerator, washing machine, television, computer, motorcycle). Table 2.5 shows household's access, use or ownership of some of the most relevant variables included in the wealth index for both urban and rural areas.

TABLE 2.5.  
HOUSEHOLD SOCIOECONOMIC CHARACTERISTICS BY AREA (%)

Variable description	Urban	Rural
<b>Access to public utilities and infrastructure</b>		
Waste collected by public utility	98.39	3.03
Piped water as source for drinking and cooking water	97.09	66.08
Piped water as source for drinking and cooking water	92.73	3.56
Electricity, LPG or natural gas as fuel used for cooking	97.54	18.04
Home has access to electricity	99.73	93.39
Home has access to telephone services	57.85	0.91
<b>Housing conditions</b>		
Adequate flooring	68.45	8.52
Adequate exterior walls	96.17	58.82
<b>Property and use of durable assets</b>		
Household has and uses a refrigerator	84.73	55.71
Household has and uses a washing machine	59.85	19.04
Household has and uses an electrical shower	24.44	7.82
Household has and uses a television	96.28	81.21
Household has and uses a computer	42.92	7.92
Household has and uses a motorcycle	17.92	20.86
<b>Number of households</b>		
Number of households	5,448	4,720

Source: Own calculations based on ELCA.

For every variable related to access to public utilities and housing conditions, and in most cases of asset possession, there is a higher proportion of households in better socioeconomic conditions in urban areas than in rural ones. Furthermore, the inequality in the access to public infrastructure between areas is enormous: while in urban areas most of the utilities reach more than 90% of the population, in rural areas, with the exception of electricity covering 93% of rural households and water and sewage covering 66%, the remaining utilities do not reach one fifth of the population.

On the other hand, the differences between areas in the ownership of durable assets are considerably smaller. Moreover, given that motorcycles are an important means of transportation in rural areas, households in these areas own them more frequently than in urban ones. Meanwhile, families living in cities more often own a washing machine, an electrical shower, a television and computers.

Chart 2.1 shows the approximate distribution of the wealth index by area. In rural areas, there is a higher proportion of low wealth level households (lower index values) as well as a more unequal distribution than the urban case. In addition, there is a small concentration of households with considerably higher socioeconomic levels, well above the rural average. (In Chart 2.1, right

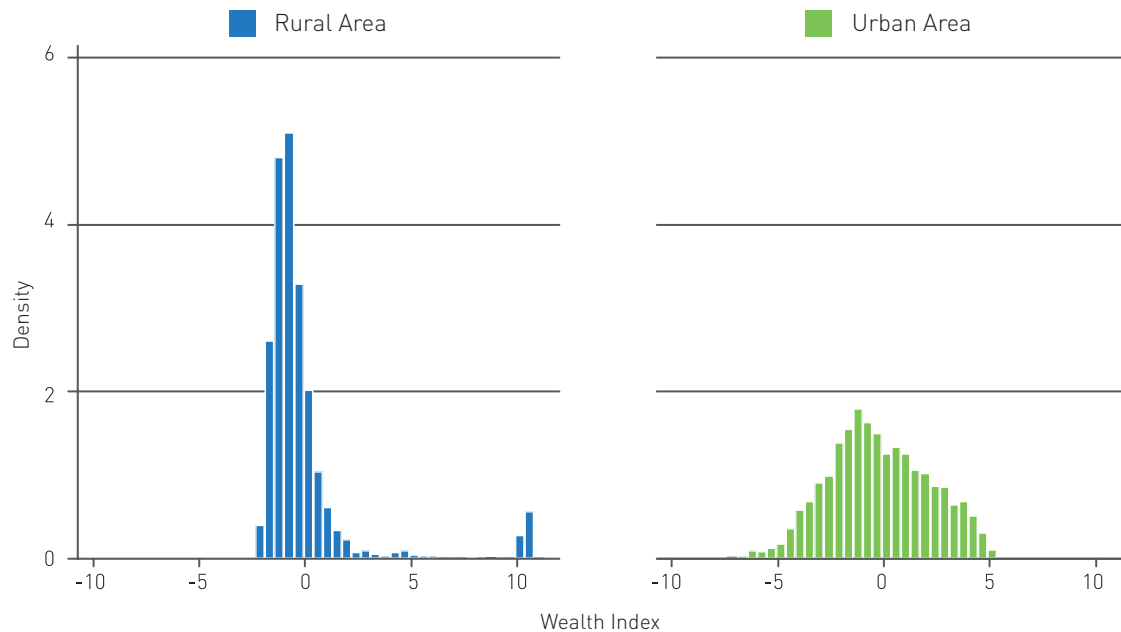
hand side of the first panel). On the other hand, in urban areas there is greater wealth homogeneity among households, and a higher proportion of the population is wealthier. In short, cities exhibit lower levels of wealth inequality.

In rural areas, there is a higher proportion of low wealth level households as well as a more unequal distribution than in the urban case.



↑ Anderson Ramírez and Yessica Maya during an interview with the ELCA team, Palmira (Valle del Cauca)

**CHART 2.1.**  
WEALTH INDEX DISTRIBUTION BY AREA



Source: Own calculations based on ELCA.

The wealth index simply orders households according to their wealth level; therefore its value does not have an absolute interpretation. In order to classify households into similar wealth groups, they were divided into wealth quintiles by geographic area<sup>3</sup>. The first quintile groups together households with the lowest wealth index values, which include the poorest households, while the fifth quintile includes the wealthiest households and those with better wealth conditions, therefore having the highest index values.

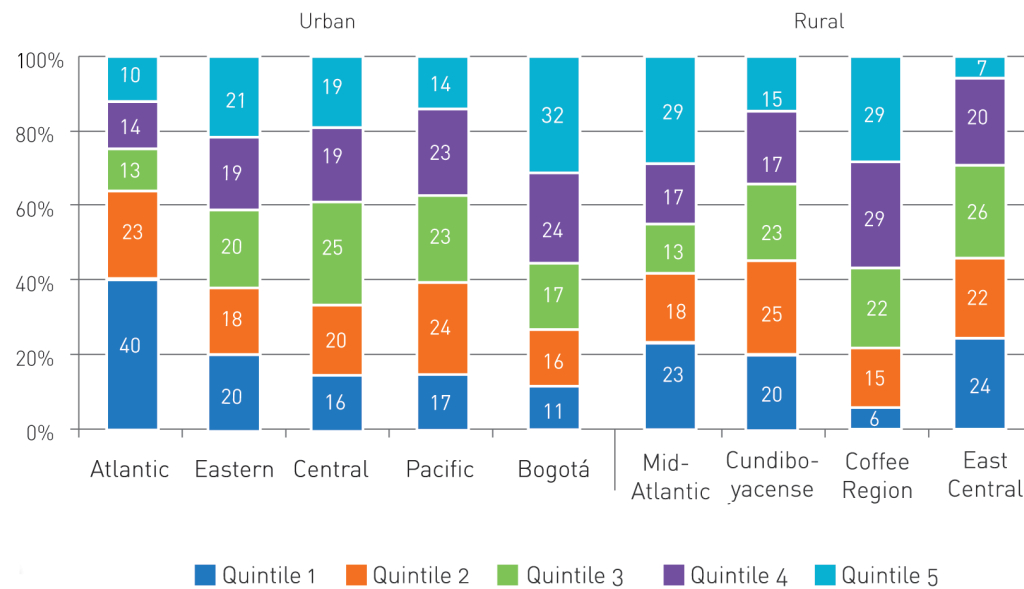
The distribution by quintiles reveals disparities in each area (Chart 2.2). For starters, within the urban sample, Bogotá emerged as the region with the highest proportion of households in the two highest quintiles (56%), while having the lowest percentage in the two lowest quintiles (27%). In contrast, in the Atlantic region the majority of the population falls in the lowest two wealth quintiles (63%), and another 24% in the two highest quintiles. The two cases described show great inequality both between and within urban and rural areas, although the other three regions —Eastern, Central and Pacific— all indicate a more equal and uniform distribution across wealth quintiles. In rural areas, the Coffee Region has the highest proportion of population in the top two quintiles and the least proportion of poor population, with 21% of the population in the first two quintiles and only 6% in the first.

The central regions of the country (East Central and Cundiboyacense) have a relatively balanced distribution across quintiles and low percentages of wealthy households, while in the Atlantic region the highest quintile exhibits the highest proportion of the population (29%).

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3. The wealth index does not constitute a cardinal measure. Thus, assessing its distribution in quintiles synthesizes and facilitates the analysis, since it generates an easy interpretation for groups of households with similar conditions (Rutstein y Johnson, 2004).

**CHART 2.2.**  
WEALTH DISTRIBUTION BY AREA AND REGION



Source: Own calculations based on ELCA.

Expenditure by households —and, in particular, food expenditure— is an indicator conventionally used as proxy for the socioeconomic status of households, together with aggregate family income (Kolenikov and Angeles, 2008). From the information provided by ELCA, per capita monthly household expenditure quintiles were constructed for monthly per capita expenditure of households (total and food) in order to compare the distribution against the one derived using wealth quintiles. The monthly salary of the head of the household and the socioeconomic level associated with power utility rates for the urban area, were also used as indicators of household wealth conditions. Lastly, keeping in mind the incidence of poverty on the capabilities and dynamics of assets and capital accumulation (Carter & Barret, 2006), in particular on human capital<sup>4</sup>, the level of education achieved by the head of household is included as the last contrast variable.

Table 2.6 indicates a positive relation between quintile wealth distribution and other socioeconomic measurements. Although socioeconomic level is only available for cities, it is the variable that holds the highest correlation with wealth quintiles (0.51). Thus, while broadly capturing the quality of public utilities accessed by the household, the socioeconomic level is positively correlated with the wealth quintile. In turn, the quintile distribution of the monthly per capita expenditure shows a positive correlation greater than the monthly per capita expenditure on food, given that the latter does not

## 2.4. WEALTH QUINTILES AND OTHER SOCIOECONOMIC STATUS MEASUREMENTS

Due to its multidimensional nature, the analysis of poverty requires going beyond the measurement of an indicator associated with only one dimension, like household expenditure or monetary income. The wealth index presented here manages to add comprehensively the characteristics of poor households, as suggested by Sen (1976). Additionally, its quintile distribution maintains a high correlation with conventional measures of poverty, as shown below.

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4. Human capital is defined as an individual's collection of skills and abilities, which determines his/her productive capacity in the creation of aggregate value. The process through which human capital is accumulated partly depends on education and experience, and partly on well-being and health.



↑Children playing in the river in Cereté (Córdoba)

take into account the cost and ownership of durable goods, which are elements of the wealth index. The monthly salary of the head of the household shows a stronger relation than food expenditure quintiles and the educational level exhibits the least of the correlations among the indicators, despite being positive and statistically significant.

For urban areas, the head of the household's salary, in comparison with the quintile of monthly expenditure per capita, does not indicate a strong relation with wealth. This could be explained by the difficulty in measuring income, the tendency to report lower levels, the omission of other income

sources other than labor, its instability and volatility, and the inability to value unpaid home production (Rutstein & Johnson, 2004). In rural areas, the latter two factors are particularly relevant in explaining not only the low association of the head of the household's monetary income with wealth distribution, but with other measures proposed, as will be shown immediately.

In this association analysis, the differences between areas reappear, as the urban area index has higher correlations with other measures of socioeconomic status than the one of rural areas. In addition, the greatest differences between areas are found in the

indicator with the highest correlation: the quintile of monthly expenditure. It is then possible to assert that, since poverty conditions are different, the definition of poverty itself is also different. As an example, a rural household with acceptable wealth conditions could show low monthly food expenditure since much of the rural economy is based on agricultural production for self-consumption. In the same manner, given the working conditions of an agricultural laborer, wage-earning labor in rural areas may be associated with appalling socioeconomic household conditions, when compared to a family that owns a plot of land for growing products for self-consumption and trade.

**TABLE 2.6.**  
CORRELATION BETWEEN WEALTH QUINTILES AND OTHER INDICATORS BY AREA

	Area	Expenditure quintile	Food expenditure quintile	Salary	Educational level	Socioeconomic level (urban)
Wealth quintile	Urban	0.54	0.41	0.43	0.41	0.51
	Rural	0.27	0.25	0.27	0.18	

Source: Own calculations based on ELCA.

Graph 2.3 depicts the differences found when contrasting quintile distribution based on wealth index and monthly expenditure per capita. In particular it highlights the presence of some households with high per capita expenditure but low wealth levels, and others with low per capita expenditure but high wealth levels. This reflects that, ignoring other attributes of the wealth of households included in the index, the expenditure level does not necessarily represent socioeconomic conditions.

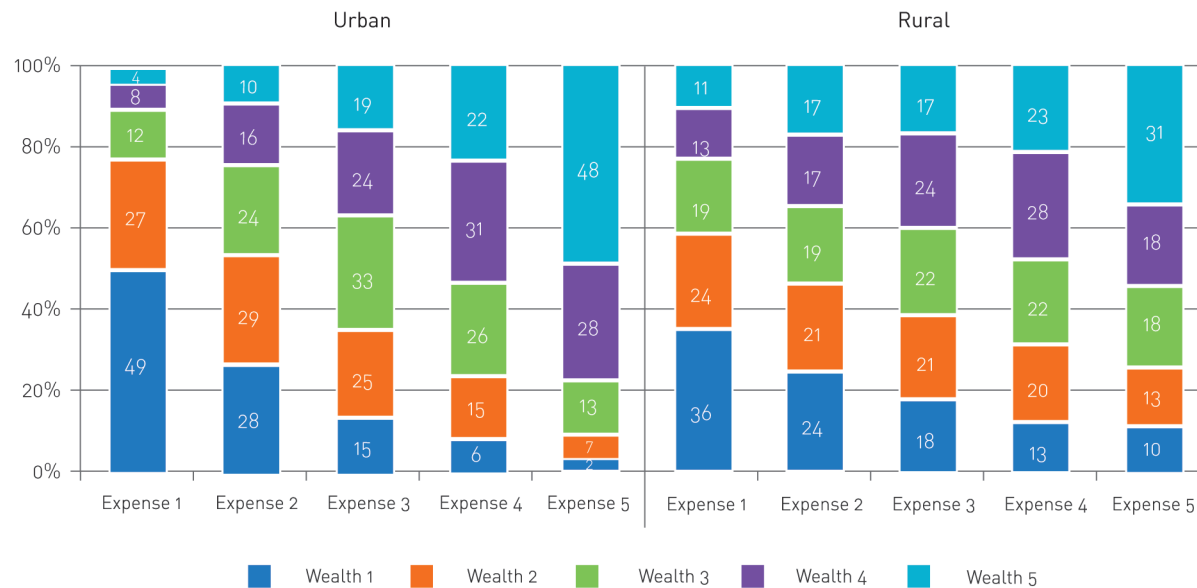
Notwithstanding, it is noteworthy that the distributions also indicate certain similarities. In the first place, for most of the expenditure quintiles, the largest proportion of households belongs to the corresponding wealth quintile. This equiva-

lence is observed, for example, in the lowest expenditure quintile, where nearly half of the households (49% in urban areas and 36% in rural areas) are also in the first wealth quintile, that is, the poorest one. In the second place, wealthy households, as determined by the index, are not representative of households with low monthly per capita expenditure and, in turn, households with considerable poverty conditions correspond to a small proportion of households with high monthly expenses. In other words, in both urban and rural areas, households having the highest monthly expenditure are themselves those with a higher level of wealth, while households spending less are the ones that exhibit worse socioeconomic conditions.



↑ Adriana Diaz, 37, is a housewife and employee. She lives with her husband and three children, one of them is Dayana Stefania Nuñez (in the picture).

**GRAPH 2.3.**  
WEALTH DISTRIBUTION BY MONTHLY PER CAPITA EXPENDITURE QUINTILE BY AREA



Source: Own calculations based on ELCA

**TABLE 2.7.**  
MONTHLY SALARY FOR THE HEAD OF THE  
HOUSEHOLD, BY QUINTILE AND AREA  
(COP\$)

Wealth quintile	Urban area	Rural area
Quintile 1	440,958	248,893
Quintile 2	590,100	307,178
Quintile 3	739,056	394,873
Quintile 4	1,076,342	388,334
Quintile 5	1,440,480	496,838
Quintile 5 – Quintile 1	999,523	247,945
Total	874,110	371,030

Source: Own calculations based on ELCA.

Finally, household income measurements show an increasing relation to wealth quintiles (Table 2.7). Thus, the head of the household's salary increases as the average household wealth quintile is increased. In particular, for urban areas the average salary more than tripled between the lowest and the highest quintile, with a difference of about one million pesos (US\$555), while in rural areas, for the same quintiles the difference is much smaller, around \$250,000 (US\$139). Therefore, higher income is directly associated with an improved household wealth status, with a salary gap between the richest and the poorest of half a minimum wage in rural areas<sup>5</sup>, and nearly twice the minimum wage for urban areas.

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5. Current minimum wage for 2010, year in which the survey was conducted, is \$515,000 pesos (US\$286).

## 2.5. CONCLUSIONS

According to several wealth measurements, the poverty of Colombian households reflects great disparity between urban and rural areas, between regions, and wealth and expenditure quintiles. The persistence of a high portion of the population living in precarious conditions is noted, especially in rural areas and in some specific regions, such as the Atlantic region. In addition, urban and rural poverty are structurally different, with a lower level of inequality, higher access to public utilities and infrastructure, better housing conditions, and greater accumulation of durable assets for urban areas, and a lower association between expenditure, income, and education with wealth for rural areas.

In that sense, the analysis, measurement and characterization of poverty across geographic areas should be based on a multidimensional perspective, which includes elements taken from structural po-

verty dynamics. The wealth index proposed in this chapter is consistent with these elements when it comes to assessing the wealth conditions and standard of living of households over a long period of time (Filmer and Pritchett, 2001). This index then is consistent with a comprehensive definition of poverty that goes beyond the deprivation of monetary resources or assets, and considers deprivation of opportunities and of possibilities of improving quality of living.

Thus, although the wealth index omits other dimensions in which poverty manifests itself, such as the level of human capital development in both health and education (Alkirie and Santos, 2010), it becomes a suitable instrument for studying and understanding the dynamics and effects of poverty in Colombian households, a task that will be completed across the following chapters.



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