International Labour Organization

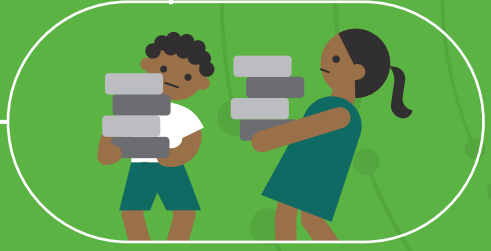
Regional Initiative
Latin America and the Caribbean
Free of Child Labour

UNITED NATIONS
ECLAC

CHILD LABOUR RISK IDENTIFICATION MODEL

METHODOLOGY FOR DESIGNING PREVENTIVE STRATEGIES AT THE LOCAL LEVEL

SECOND (REVISED) EDITION
2022



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This document is part of the agreement signed between the International Labour Organization (ILO) and the Economic Commission for Latin America and the Caribbean (ECLAC) on "Child Labour, Poverty and Inequality", an inter-agency action promoted by the ILO in its capacity as Technical Secretariat of the Regional Initiative Latin America and the Caribbean Free of Child Labour. This joint action seeks to generate knowledge to improve decision-making on policies aimed at the prevention and sustained eradication of child labour in the region.

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INTRODUCTION

Child labour is a widespread and persistent phenomenon in Latin America and the Caribbean. Its occurrence is directly linked to the violation of the fundamental rights of boys, girls and adolescents, and generates profound and lasting negative impacts throughout life (ECLAC, 2017). In recognition of these profound negative consequences, for more than 20 years, the countries of the region have been making great efforts to eradicate this scourge. These include the ratification of international instruments–especially the Minimum Age Convention, 1973 (No. 138), and the Worst Forms of Child Labour Convention, 1999 (No. 182), of the International Labour Organization (ILO)-, the materialization of important advances in legislative matters at the national level, the development of a knowledge base on the subject and the promotion of prevention and eradication policies and programs. This has led to a significant reduction in the incidence of child labour[1], which places Latin America and the Caribbean in a privileged position to become the first developing region free of child labour (ILO, 2013).

According to estimates by the International Labour Organization (ILO, 2017), 10.5 million children and adolescents were in child labour in Latin America and the Caribbean, corresponding to 5.3% of the regional population of 5 to 17 years old. Although there is a downward trend when comparing these results with those of 2008 —in this period, child labour was reduced by approximately 4 million—, it is also verifiable that progress is slow, and it is expected that child labour may increase significantly due to the consequences of the COVID-19 pandemic (ECLAC-ILO, 2020), which calls for redoubling efforts to avoid a setback.

The complexity of the phenomenon, combined with a complex economic scenario for Latin America and the Caribbean[2], calls not only to redouble efforts to avoid a setback, but also to take action to accelerate the rate of reduction in child labour. In this context, 30 countries in the region, together with employers' and workers' organizations, carry out the Regional Initiative for Latin America and the Caribbean Free of Child Labour, which seeks to accelerate the pace of eradication of this serious problem to achieve compliance with Target 8.7 of the 2030 Agenda.

To achieve the ambitious goal of eliminating all forms of child labour by 2025, the Regional Initiative has developed a Policy Accelerator Framework[3]. This includes a series of strategies that seeks to maximize the scope and effectiveness of social protection and education systems in the prevention and eradication of child labour, under the coordination of the respective Ministries of Labour (ILO, 2017). The Accelerating Policy Framework is based on the combination of two approaches: on the

1 "It is probable that these advances have also been driven, in greater part, by more extensive economic and demographic forces that accompanied the government efforts" (ILO, 2017:3).

2 See: ECLAC (2017). Brechas, ejes y desafíos en el vínculo entre lo social y lo productivo.

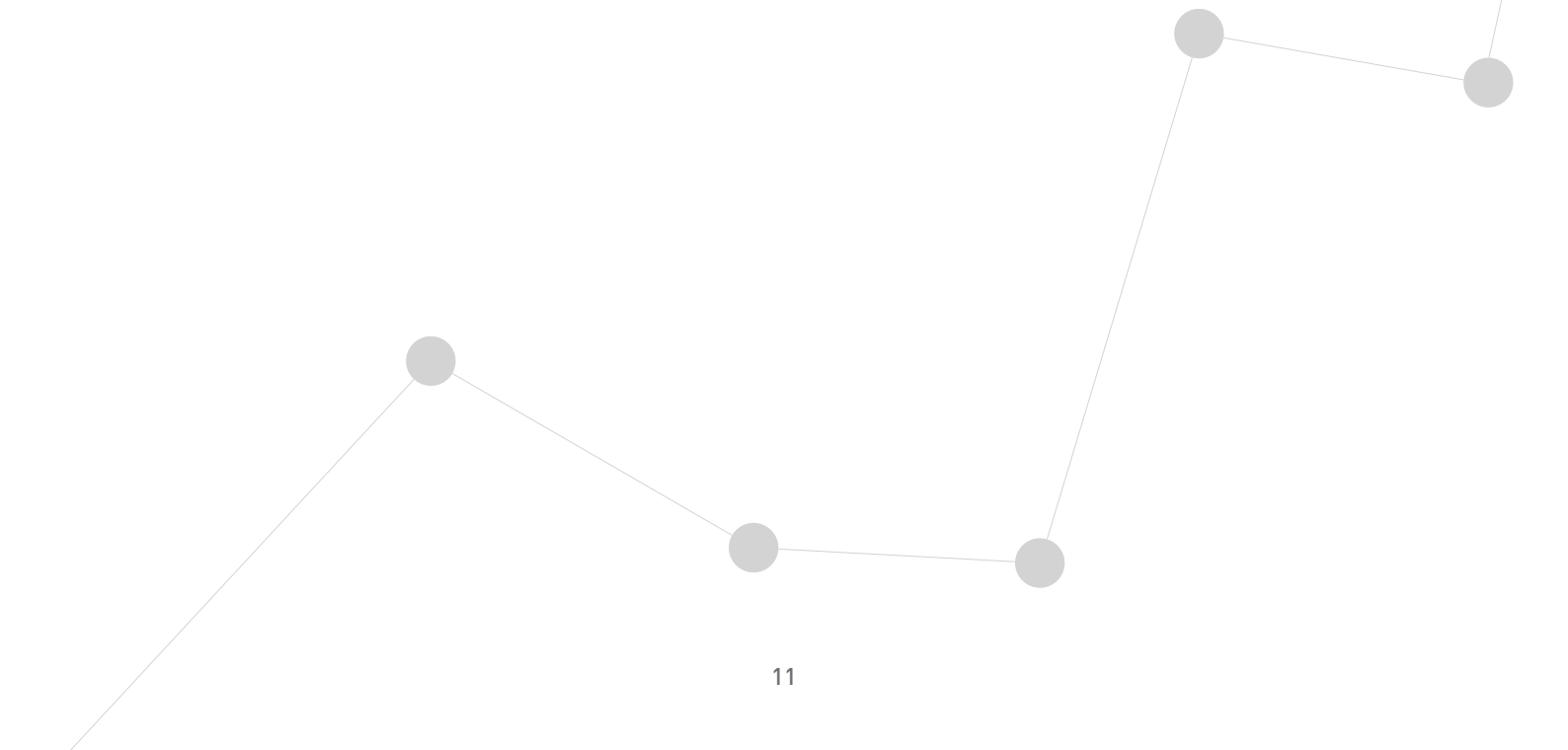
3 See: https://www.iniciativa2025alc.org/sites/default/files/acceleration-framework-RI.pdf

one hand, a protection approach for the withdrawal of child labour and the restoration of rights, and on the other, a preventive approach, which includes actions designed to timely identify and intervene boys and girls who are on a path towards child labour, to prevent their early entry into the labour market.

Within these actions, and considering that it is imperative to provide reliable, comprehensive and timely data that serve as a basis to determine the priorities of national and sub-national action aimed at the prevention and elimination of child labour, the ILO Regional Office for the Americas, in its capacity as Technical Secretariat of the Regional Initiative for Latin America and the Caribbean Free of Child Labour, promoted an alliance with the Economic Commission for Latin America and the Caribbean (ECLAC) in order to jointly generate tools and knowledge that enable the timely identification of children and adolescents who are on the path towards child labour.

From this alliance, a tool with two methodologies emerged: *the Child Labour Risk Identification Model and the Child Labour Vulnerability Index*, which, although with differences, allow —based on the statistical information existing in the countries— to identify the territories in which there is greater probability or vulnerability of child labour and estimate the weight of various risk indicators in the territories, in order to define which multi-sectoral actions are most relevant in them to interrupt the development of child labour. This would enable countries, both at the national and sub-national levels, to have reliable information to design focused and articulated responses, improve the performance and effectiveness of public policies, advance in the achievement of national goals, and contribute to achievement of the global commitments assumed.

The document is divided into five sections. The first examines, based on the available information, the current context of child labour in the region, analysing its prevalence in the countries and looking for common characteristics among them. The second reviews different studies in order to develop an analytical body that accounts for the factors associated with child labour. This section is divided into two parts, on the one hand, the factors associated with the context are analysed and, on the other hand, evidence is provided about the factors of the home and of the child himself. The third section examines the different elements present when measuring child labour, among which issues related to the statistical definition and the sources of information available for such measurement stand out. The fourth section details the two proposed methodologies to identify and estimate child labour at the sub-national level based on existing statistical information in the countries. Finally, in the fifth section, a validation exercise of the proposed methodology is presented, indicating its strengths and weaknesses.



1

CHILD AND ADOLESCENT LABOUR IN LATIN AMERICA AND THE CARIBBEAN

In Latin America and the Caribbean, most countries have made significant efforts to prevent and eradicate child labour. This process has led to a significant reduction in both absolute and relative terms, which places the region in a privileged position to become the first developing region free of child labour (ILO, 2013).

According to ILO estimates (2017), the percentage of boys, girls and adolescents between 5 and 17 years old in child labour fell from 10.8% in 2008 to 7.3% in 2016, which is equivalent to a decrease of 3.7 million people in that situation. In this period, there was also a significant reduction in hazardous work[4], which decreased from 6.7% to 4.4%, equivalent to 3.2 million children and adolescents.

Chart No. 1
Latin America and the Caribbean: Child Labour and Hazardous Child Labour, 5 to 17 years old, 2008, 2012 and 2016

Year	Total Population 5-17	Population in child labour 5-17	Percentage	Population in hazardous child labour 5-17	Percentage
2008	141.043.000	14.125.000	10.8	9.436.000	6.7
2012	142.693.000	12.505.000	8.8	9.638.000	6.8
2016	144.004.000	10.461.000	7.3	6.278.000	4.4

Source: ILO, 2013 and ILO, 2017

In absolute numbers, for 2016 it is estimated that there are more than 10.4 million boys, girls and adolescents, between 5 and 17 years old, in a situation of child labour in the region. Although the statistics are not comparable between the countries, following the definitions and official statistics reported in each of them, it can be seen that Brazil, Mexico and Peru are the ones with the largest number of populations in this condition. In percentage terms, the countries with the highest prevalence of child labour are Haiti (34%), Bolivia (26%), Paraguay (22%) and Peru (21.8%); and those with the lowest prevalence are Costa Rica (2.1%), Panama (2.5%), Belize (3.2%) and Argentina (5.8%).

4 In Article 3 (d) of the ILO Convention on the Prohibition of the Worst Forms of Child Labour and Immediate Action for its Elimination, 1999 (No. 182), hazardous child labour is defined as follows: *(d) work which, by its nature or the conditions in which it is carried out, is likely to harm the health, safety or morals of children.*

Chart No. 2

Latin America and the Caribbean (19 countries): Population and percentage of boys, girls and adolescents in situations of child labour (Different years)

Countries	Year	Boys, girls and adolescents between 5 and 17 years old in situations of child labour	
		Number	% of the total of the age group
Argentina	2017	522.706	5.8
Belize	2013	3.528	3.2
Bolivia (Plur. State of)	2008	800.180	26.4
Brazil	2019	1.800.000	4.6
Chile	2013	219.624	6.6
Colombia	2019	586.000	5.4
Costa Rica	2016	20.896	2.1
Dominican Republic	2010	304.062	12.2
Ecuador	2016	290.325	6.5
El Salvador	2015	140.700	8.9
Guatemala	2014	731.115	16.9
Haiti	2012	815.993	34.4
Honduras	2019	364.765	14.8
Jamaica	2016	37.965	5.8
Mexico	2019	2.017.737	7.1
Panama	2016	23.855	2.5
Paraguay	2011	416.425	22.4
Peru	2018	818.589	10.5
Uruguay	2010	68.100	9.9

Source: ECLAC, based on official data from the countries of Latin America and the Caribbean

Note 1: The definition and official measurement reported by each country is used. In most countries, the measured child labour is associated with the economic activity/occupation not allowed.
Note 2: For Argentina, the age tracts correspond to 5–15 years old and 16–17 years old.
Note 3: For Bolivia, the Dominican Republic and Peru, the age tracts correspond to 5–13 years old and 14–17 years old.

Among the characteristics that stand out, and although the numbers vary from country to country, it can be seen that a large part of the boys, girls and adolescents who work, does so in agricultural activities.

Even though there are no updated regional studies in Latin America and the Caribbean that make it possible to compare the situation of children and adolescents in the region, those at the national level[5] show that the region has a series of common features with regard to child labour.

Among the characteristics that stand out, and although the numbers vary from country to country, it can be seen that a large part of the boys, girls and adolescents who work, does so in agricultural activities. Within the sub-regions, the Andean region is the one with the highest concentration in these activities (62%), followed by Mesoamerica (43%), while the lowest proportion, 38%, is found in the Southern Cone (ILO, 2013). At country level, in Ecuador, for example, the results of the Child Labour Survey (2013) show that 71% of the boys, girls and adolescents who work, does so in agriculture, 21% in the service sector and 8.1% in industry. In Guatemala, the ENCOVI Survey (2014), shows that 65% of the boys, girls and adolescents who work, does so in agriculture. In Jamaica, the 2016 JYAS survey indicates that 17.4% of those who are in child labour does it in agriculture, mainly family-type. In Colombia, according to the Large Integrated Household Survey (2017) it is found that agriculture accounts for 44.4% of child labour, while commerce, hotels and restaurants represent 30.1% (DANE, 2017). On the other hand, in Mexico, 30% of boys, girls and adolescents work in the agricultural sector; 25% in the services sector and 23% in commerce (INEGI, 2015).

A second regional characteristic is the high percentage of informality in child labour, especially concentrated in unpaid family work. In Guatemala, for example, more than 64% of employed children and adolescents are inserted in the informal sector, where more than 95% does so in the form of unpaid family workers (ENEI, 2014). In El Salvador, 70% of child workers are informal and 60% of the total, unpaid family workers (DIGESTYC, 2013). In Panama, two out of every three boys, girls and adolescents work without pay in their own home (INEC and UCW, 2014).

A third common feature is the marked gender division of child labour. Here it is found that boys and adolescents have higher rates of child labour compared to girls and female adolescents; and that the former concentrate their work on productive activities outside the home, especially in agriculture. In El Salvador, for example, 76% of child labour is carried out by men, where agriculture, livestock and forestry predominate (DIGESTYC, 2013). In Belize, according to the 2013 National Survey of Child Activity, boys and adolescents (5.1%) are four times more likely than girls (5.1% vs 1.2%) to be victims of child labour. In Guatemala, about 67% of child labour is carried out by men, especially indigenous

5 The national studies measure child labour in different ways, therefore, these are not comparable among them.

children, 69%, dedicating themselves mainly to agriculture, 65% (ENEI, 2014). On the other hand, girls and female adolescents concentrate their work on unpaid domestic and care activities. In Ecuador, for example, 7 out of 10 people, between the ages of 5 and 17, who perform domestic tasks are women (INEC, 2012). In Brazil, for its part, about 214,000 boys, girls and adolescents are engaged in domestic work and, of them, 94.2% are women, a proportion that remains among adults and marks the strong gender division in this occupation. (ECLAC, 2016). This situation generates a double disadvantage, since many of them, in addition to performing salaried domestic work, have to carry out domestic tasks in their own homes. It should be noted that this activity is often made invisible because in some countries, child labour is conceived only within the limits of the System of National Accounts, leaving domestic (non-salaried) and care work outside the official measurements.

A fourth characteristic that can be extracted from the national reports is that child and adolescent labour affects indigenous and Afro-descendant peoples to a greater extent. In the Plurinational State of Bolivia, almost half of the boys, girls and adolescents who are immersed in child labour situations are indigenous and many of them carry out hazardous activities. Similarly, in Brazil, according to PNAD data from 2016, about 64% of boys and girls between the ages of 5 and 17 who perform child labour in Brazil are Afro-descendants, a fact that increases in the northern and north-eastern regions, where the incidence of this population exceeds 80%. A similar situation is observed in Uruguay, where the incidence of child labour among Afro-descendant boys, girls and adolescents between 5 and 17 years of age is 17.2%, while among non-Afro-descendant or indigenous people it is 13%.

Furthermore, in most of the countries of the region there is a concentration in certain regions within the countries. In Peru, the regions with the highest rates of child labour are Huancavelica

In Brazil, for its part, about 214,000 boys, girls and adolescents are engaged in domestic work and, of them, 94.2% are women, a proportion that remains among adults and marks the strong gender division in this occupation. (ECLAC, 2016). This situation generates a double disadvantage, since many of them, in addition to performing salaried domestic work, have to carry out domestic tasks in their own homes.

(79%), Puno (69%), Huánuco (65%), Amazonas (64%) and Pasco (50%) (MINTRA, 2015). In Brazil, the states of Bahia, Minas Gerais, Pará, and São Paulo are the ones with the largest number of children and adolescents in child labour, all of them with more than one hundred thousand children (SAGI, 2015).

A fifth common characteristic is that, in a large part of the countries, children and adolescents do not receive any remuneration and those who receive some salary are well below the levels legally established in the countries. In Colombia, for example, in 2017, 56.2% of working children or adolescents did not receive remuneration. In Ecuador, only 30.5% declare that they receive income from their work. In Costa Rica, 20.9% of working girls and adolescent women receive payment in kind for their work. In Uruguay, for their part, the majority receive income in a monetary way in exchange for their work, which represents less than 9% of total household income.

Finally, in Latin America and the Caribbean, child and adolescent labour is concentrated in the later ages, generally between 15 and 17 years old, a characteristic that differs from those found in other regions of the world. Indeed, according to the latest report of the World Estimates prepared by the ILO (2017), in the world, boys and girls between 5 and 11 years old constitute 48% of all children in child labour, a figure which in the Americas[6] is around 37%.

In summary, the pace of progress and the indicators achieved raise concern regarding the possibility of meeting national and international goals and commitments, among which the 2030 Agenda for Sustainable Development stands out. To achieve the ambitious goal of eliminating all forms of child labour by 2025, action is required on several fronts, including reducing poverty, improving access, retention, relevance and quality of education, generating decent work opportunities for adult family members (men, women, and young people of working age), promoting gender equality, strengthening social protection policies, among others, with special attention to the populations most vulnerable to child labour, considering territorial, gender and ethnic-racial dimensions.

6 Includes the countries of Latin America, the Caribbean, the United States and Canada. For greater detail on the countries considered, see: ILO (2017). World estimates on child labour. Results and trends 2012-2016.

2

FACTORS ASSOCIATED WITH CHILD AND ADOLESCENT LABOUR

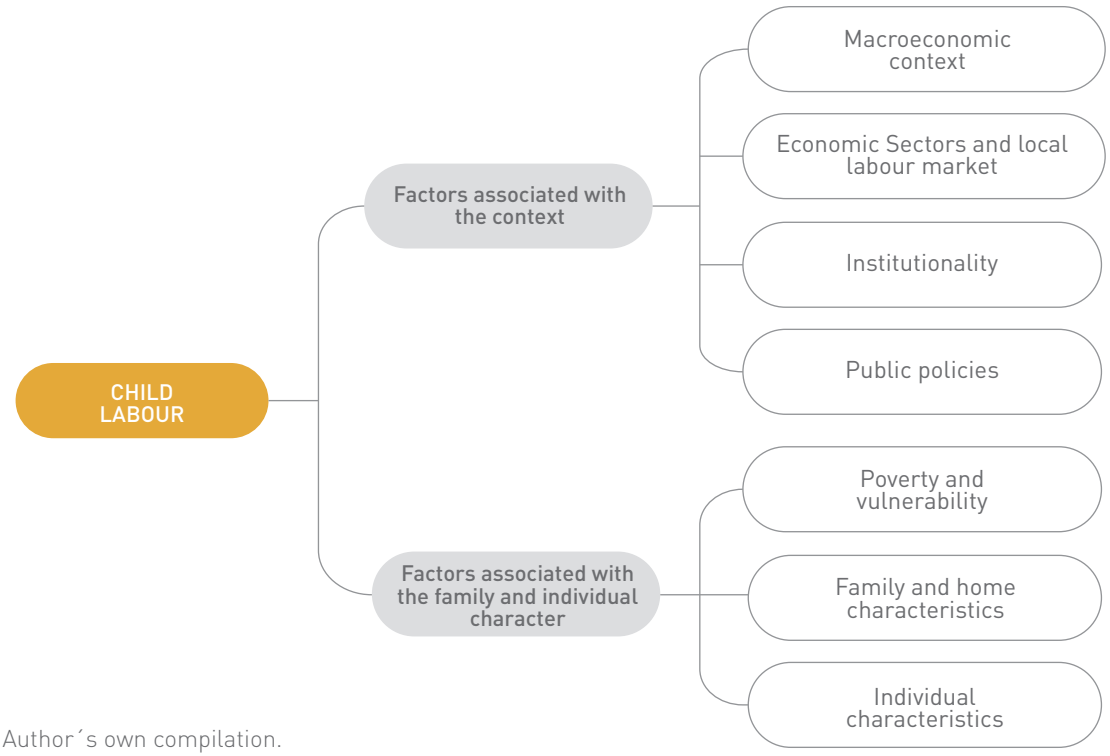
The main dimensions of analysis that emerge from the literature review are presented below to explain the phenomenon of child labour.

The information is structured in two sections (See Graph Nº 1). In the first place, the factors associated with the context in which children, adolescents and their families live are exposed, and how these affect the decision to incorporate them into the labour market. Within the context, a difference is made between the macroeconomic context, economic sectors, institutions and the public policies that are implemented.

Second, family and individual factors are shown, namely the characteristics of fathers, mothers, boys and girls and their socioeconomic status, which help to explain the persistence of the phenomenon.

Graph No. 1

Factors associated with child labour



Source: Author´s own compilation.

2.1 Factors associated with the context

A. Macroeconomic context

There are several economic factors that are associated with the increase or decrease in child labour. Aspects such as the country's Gross Domestic Product (GDP) and GDP per capita, the minimum wage and its ability to cover the cost of living (critical wage), socio-economic crises, unemployment, the preponderance of certain economic sectors and their dynamism, the degree of formality in the labour market and the increase in the demand for qualified labour, influence the decision of families to incorporate their sons and daughters into the labour market or, on the contrary, to keep them in school.

There is vast literature that shows that child labour is a buffer mechanism for families in the face of socioeconomic crises, such as the one the world is experiencing due to the COVID-19 pandemic. An example of the above is the study by Blanco and Valdivia (2006), who analyse the incidence of the economic contraction in Venezuela during the 2002-2003 period.

There is vast literature that shows that child labour is a buffer mechanism for families in the face of socioeconomic crises, such as the one the world is experiencing due to the COVID-19 pandemic. An example of the above is the study by Blanco and Valdivia (2006), who analyse the incidence of the economic contraction in Venezuela during the 2002-2003 period. The results revealed that the proportion of boys and girls in the labour market had practically doubled while GDP fell, and then this proportion decreased with the recovery of the economy. Similar effects were found in Argentina during the 1998–2002 period (Rucci, 2003) and in Mexico's 1995 peso crisis (McKenzie, 2003). Likewise, an examination of the trends in 4 countries of the region, during the financial crisis period of 2008-2009, revealed that the economic crisis reduced or reversed the progress made in the fight against child labour. Specifically, in Colombia child labour increased considerably, marginally in El Salvador, while in Brazil and Ecuador a marked decrease in progress made was observed (ILO, 2013).

At the family level, the results of the research show that child labour many times is an important part of how households respond to financial shocks experienced by a family, such as job loss. Data on the impact on unemployment shocks illustrate this point. For example, a study by Duryea et al. (2007) in urban areas of Brazil revealed that the increase in adult unemployment has a considerable effect on the probability (reaching 60%) that boys and girls will drop out of school and start working.

Restrictions on access to credit put pressure on more child labour by interfering in the ability of fathers and mothers to make exchanges between current and future income (Acevedo et al., 2011; Brown, 2002). In a scenario of access to credit, faced with variations in income, families can make use of their expectations of future income and thus moderate the restriction in consumption over time. When families have restrictions on access to credit, they must draw on their current assets and replace the future return that education for boys and girls means with current restrictions.

Dehejia and Gatti (2002) test this hypothesis by taking a sample in 172 countries and find that there is a negative and significant relationship between child labour and credit restrictions, being higher in lower-income countries. Measured by the relevance of credit to national GDP, the increase by one standard deviation in the proportion of credit to GDP is related to a 10% decrease in the standard deviation of child labour. In the same way, access to credit mitigates the increase in child labour in contexts of variations or shocks in family income (Beegle, Dehejia and Gatti, 2003; in Acevedo et al., 2011).

On the contrary, economic growth, measured by the increase in GDP and GDP per capita, is related to the decrease in child labour. The analysis carried out by the ILO in four countries of the region, for ages between 12 and 14 years old, during the period 2001-2007, shows a strong inverse correlation between both phenomena: a coefficient of -0.83 in Colombia; -0.73 in Brazil; -0.51 in Costa Rica; and -0.47 in Honduras. The same report makes an analysis of the elasticity of child labour in relation to fluctuations in the economy. The result for these countries is -0.13 when GDP per capita is used (that is, for every 1% increase in GDP per capita, the activity or participation rate of this population group is reduced by 0.13 percentage points) and -0.08 with total GDP (ILO, 2009).

The data analysis carried out by Sauma (ILO, 2015) indicates that the cases of Chile, Panama, Peru, Bolivia and Guatemala constitute the exception to the relationship described. Chile and Panama, both countries with the lowest rate of child labour in 2002, despite sustaining high economic growth, did not achieve significant decreases towards 2012, which could reflect, according to the author, that at lower levels of child labour, economic growth has less impact on their reduction.

Similarly, Bolivia and Peru had high economic growth, but failed to reduce their rate of child labour. Guatemala, by contrast, had low economic growth and achieved a modest reduction in child labour. All three countries had the highest rates of child labour at the beginning of the measurement period.

B. Economic sectors and local labour market

As seen above, the phenomenon of child labour is closely related to the evolution of the economy in the countries and, more specifically, to the dynamics and characteristics of the local economies where families live. The economic dynamics at the local level and the characteristics of the labour market affect, on the one hand, in the job offer, its quality and wages and, on the other hand, in the subjective assessment of education according to the return it means in the local labour market.

The higher level of informality in the labour market is linked to the higher incidence of child labour. The regional analysis carried out by Sauma (ILO, 2015) finds a strong positive correlation between both dimensions, that is, higher levels of informality correspond to higher rates of child labour.

In addition, there are economic sectors with a higher prevalence of child labour. According to the ILO Global Estimates on Child Labour report (2017), the agriculture sector–which includes fishing, forestry, subsistence and commercial agriculture, livestock and aquaculture–is the sector in which adolescents who work are more likely to do hazardous work and this is where child labour is most concentrated. According to ILO estimates in the Americas, around 5.5 million children and adolescents in child labour do so in the agricultural sector, representing 51.5% of the population in child labour in the region (ILO, 2017). In addition, it is evidenced that 60.3% of this agricultural child labour is dangerous in nature and, in general, children and adolescents are more likely to be working as auxiliary workers for their families.

Various studies indicate that the area where boys, girls, adolescents and their families live has an impact on the probability that they will enter the labour market. Analyses in Nicaragua (Bonilla, 2010) show that households in urban areas with economically active heads of household reduce the probability of child labour by 49%, in relation to active heads of rural areas. A study in Ecuador (Villazhañay and Narváez, 2014) highlights that boys and girls living in urban areas increase their chances of studying and not working by 4.94 percentage points.

In addition to movements in the economy, the valuation of qualified human capital by the local labour market affects the decision of families to keep their children in school or to incorporate them into work. In the same report (ILO, 2015), the increase in the demand for skilled workers is associated with higher school enrolment for boys and girls and a reduction in child labour, since the future benefits associated with education increase. The growth of the technology industry in India, which demanded a highly qualified workforce, affected the assessment of education. Districts with the highest rate of business and job creation in the technology services sector also saw the largest increase in school enrolment, which is closely related to the decline in child labour.

Thus, as the report points out, "in countries where there are few opportunities for decent work requiring advanced skills and where the benefits of education are therefore limited, parents have less reason to postpone the entry of their children into the labour world and incur the expenses associated with their schooling" (ILO, 2015: xix).

C. Institutionalism

An important part of the efforts of international organizations committed to the prevention and eradication of child labour has consisted in generating agreements and regulations that allow it to be defined and in establishing priorities for the countries' political action. Three important international instruments —the United Nations Convention on the Rights of the Child[7], ILO Convention No. 138 on the Minimum Age[8] and ILO Convention No. 182 on Eradication of the Worst Forms of Child Labour[9]— together establish the legal limits of child labour and provide the legal basis for the measures that can be adopted at the national and international level to advance its prevention and eradication (ILO, 2015).

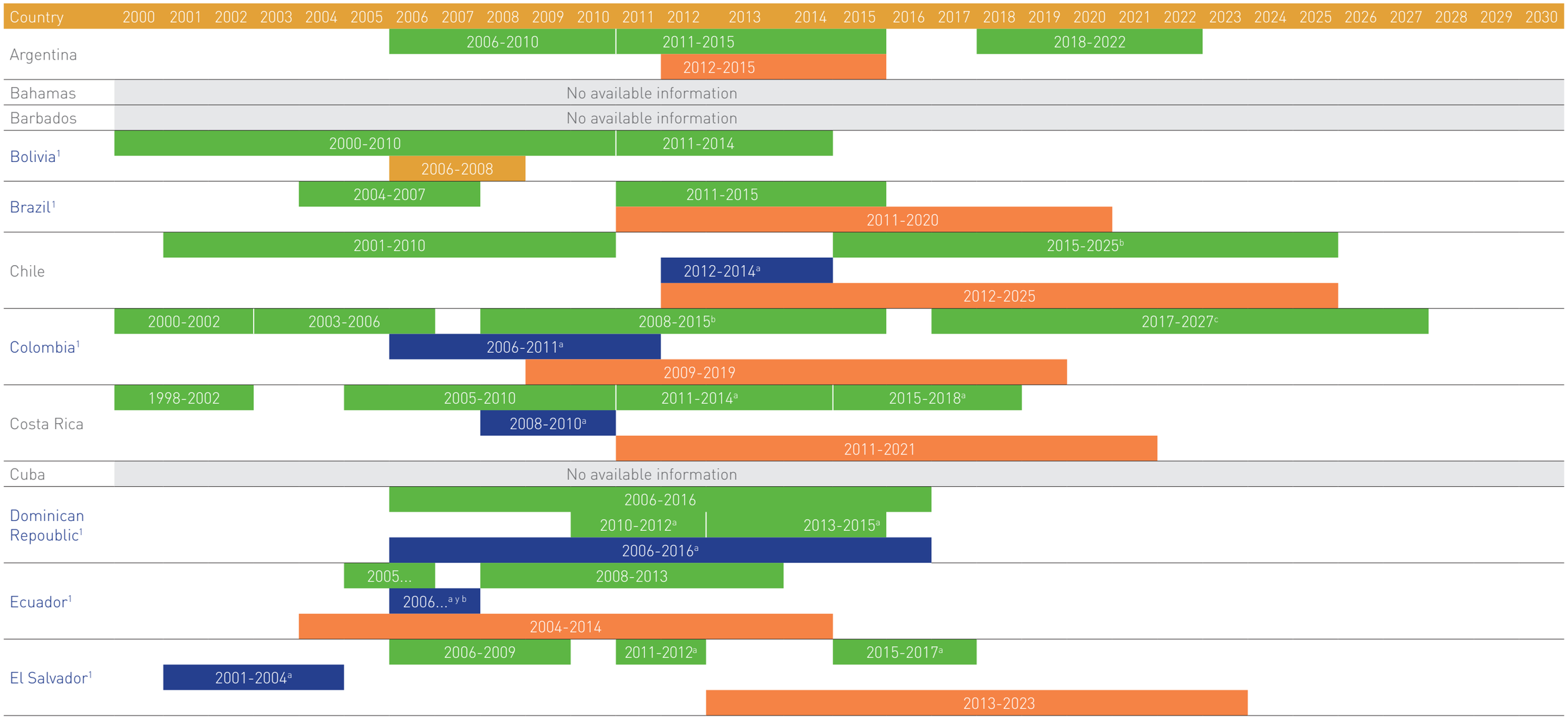
Most of the Latin American and Caribbean countries have ratified these instruments and have applied a series of flexibility clauses included in them, relating to the scope of application, the determination of the supervisory body, the setting of a minimum age, among others that affect in different ways the institutionalism and nature of the legislative and policy measures applied.

For example, in most of the countries of the region, the institutions in charge of supervising child and adolescent labour are the Ministries of Labour. On the other hand, the plans for the prevention and eradication of child labour and the protection of permitted adolescent labour have been drawn up by National Commissions specialized in the subject, led by the Ministries of Labour in association with the Ministries of Social Development/Social Protection or governing bodies in childhood and family policies. Several countries in the region include the issue of child labour among the guidelines, strategies or lines of action of National Development Plans and/or National Plans for Childhood and Adolescence. It should be noted that, in addition to the general policies on the prevention and eradication of child labour, some countries have approved instruments for specific issues such as commercial sexual exploitation of children and adolescents, trafficking in minors and child domestic work.

7 See: http://www.un.org/es/events/childrenday/pdf/derechos.pdf
8 See: http://www.ilo.org/dyn/normlex/es/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C138
9 See: http://www.ilo.org/dyn/normlex/es/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C182

Chart No. 3

National policies, strategies and plans against child labour and its worst forms in Latin America and the Caribbean (Period 2000 – 2030)



[1] Countries that have included the topic of Child Labour in their National Development Plan.

- National Plan on Child Labour / Roadmap[a] / Strategies[b] / Policy lines[c]
- National Plan for the Right of Children and Adolescents
- National Plan to Prevent and Eliminate Sexual Exploitation[a] / Trafficking[b] / Forced Labour[c]
- Three-Year Plan for the progressive eradication of child labour
- Action plan on domestic child labour

Source: R. Cheng. Update June 2020

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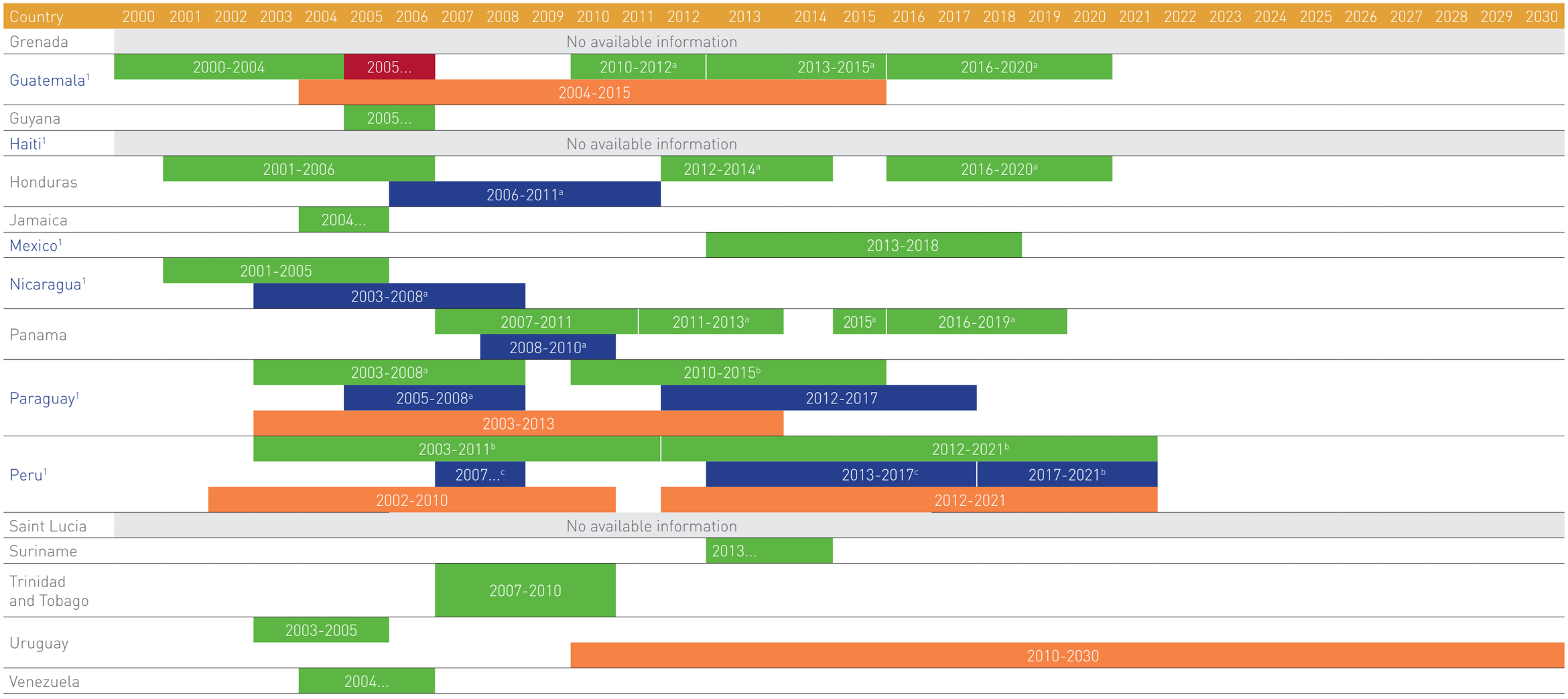

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Source: R. Cheng. Update June 2020

In recent years, the effort to articulate specific plans, strategies and policies on child and adolescent labour with other existing wide-ranging plans —mainly for children, the fight against poverty, development and social inclusion and education— stands out; with different State departments, such as the National Strategy for the Eradication of Child Labour in Colombia, which links the Ministry of Social Protection, the Colombian Institute of Family Welfare, the Ministry of National Education and the National Planning Department; and with the offer and instruments of social protection to enhance the goals of eradication of child labour, as in the case of Brazil, the integration of the Program for the Eradication of Child Labour (PETI) in the Bolsa Familia (IPEC, 2007; DNP, s /F).

On the other hand, the setting of legal minimum ages for working, which is part of the national legislation, is an important tool to safeguard the rights of children and adolescents (UNICEF, 2016). Regarding the minimum age for admission to employment, ILO Convention No. 138 indicates that it should not be less than the age at which the school obligation ceases, or in any case, 15 years. However, the same Convention contains a flexibility clause which establishes that those countries the economy and educational facilities of which are insufficiently developed may initially specify a minimum age of 14 years, after consultation with the employers' and workers' organizations concerned, if such organizations exist.

Indeed, the region has set minimum ages for admission to employment that vary between countries, ranging from 14 years to 16 years of age, as shown in the following table.

Chart No. 4

Latin America and the Caribbean (28 countries): General minimum ages for admission to employment, according to country

Country	Minimum age (a)
Argentina	16 years old
Bahamas	14 years old
Barbados	16 years old
Bolivia (Plurinational State of)	14 years old
Brazil	16 years old (b)
Chile	15 years old
Colombia	15 years old
Costa Rica	15 years old

Country	Minimum age (a)
Cuba	15 years old
Dominican Republic	14 years old
Ecuador	14 years old
El Salvador	14 years old
Grenada	16 years old
Guatemala	14 years old
Guyana	15 years old
Haiti	14 years old
Honduras	14 years old
Jamaica	15 years old
Mexico	15 years old
Nicaragua	14 years old
Panama	14 years old
Paraguay	14 years old
Peru	14 years old
Saint Lucia	14 years old
Suriname	16 years old
Trinidad and Tobago	16 years old
Uruguay	15 years old
Venezuela (Bolivarian Republic of)	14 years old

Source: Author´s own compilation and updated based on ILO, 2016a

[a] There are some countries (Ex. Brazil, Costa Rica and the Dominican Republic) that allow working before the general minimum age in order to promote vocational training.

[b] According to the Brazilian legislation, the minimum age to begin working or having a job is 16 years old, except in the condition of apprentice as of 14 years old.

In addition, ILO Convention No. 138 also recognizes a minimum age for light work, which does not interfere with the child's education, and for hazardous work. In relation to light work, all the countries in the region have an age aligned with that declared for work. With regard to hazardous work, all the countries of Latin America and the Caribbean, in line with ILO Convention No. 182, have set the minimum age for hazardous work at 18.

Likewise, another important element in the protection of children and adolescents is to establish a minimum age to complete compulsory schooling or an educational level of compulsory[10] education. Across the region, the minimum age for completing compulsory schooling has a very wide range, between 14 and 18 years, and in many countries the ages are not clearly established; instead, they refer to levels of schooling or years of compulsory study (UNICEF, 2016). Regarding this last indicator, in the region it is observed that the years of study vary between the 6 years of compulsory study in Nicaragua, up to 15 years in Ecuador and Venezuela.

Chart No. 5

Latin America and the Caribbean (26 countries): Minimum ages and years of mandatory education, according to country

Country	Minimum age to end mandatory education	Mandatory years of study
Argentina	18 years old	13 years
Bahamas	16 years old	11 years
Bolivia (Plurinational State of)	18 years old	14 years
Brazil	17 years old	14 years
Cuba	15 years old	9 years
Chile	-	12 years
Colombia	-	10 years
Costa Rica	-	10 years
Dominican Republic	-	9 years
Ecuador	17 years old	15 years
El Salvador	-	9 years
Grenada	16 years old	9 years

10 Despite this, international standards do not provide explicit guidance on the appropriate level or age in that children and adolescents should be in school.

Country	Minimum age to end mandatory education	Mandatory years of study
Guatemala	15 years old	10 years
Guyana	14 years old	9 years
Haiti	15 years old	-
Honduras	-	9 years
Jamaica	-	-
Mexico	18 years old	14 years
Nicaragua	-	6 years
Panama	15 years old	11 years
Paraguay	-	9 years
Peru	16 years old	12 years
Saint Lucia	15 years old	10 years
Trinidad and Tobago	12 years old	6 years
Uruguay	-	14 years
Venezuela (Bolivarian Republic of)	16 years old	15 years

Source: Author´s own compilation based on UNICEF 2016, UNESCO/UIS 2016, UNESCO, 2011, Education Act

The accumulated evidence accounts for the impacts of such strategies and their limitations. In the case of Brazil, Ferro and Kassouf (2005) analyse the impact of the legislation (approved in 1998) and find statistically significant decreases in child labour for males and females in urban and rural sectors, as a result of said legislation.

In contrast, a study by Edmonds and Shrestha (2012) in 59 countries shows that less than 1% of the variation in paid child labour can be explained by the implications of regulation. In contrast, household characteristics explain 63% of the variation in child participation in paid work. Undoubtedly, laws and actions aimed at regulating child labour are necessary, but not sufficient. This finding reaffirms that it is necessary to move towards articulated intervention strategies, which mainly affect the well-being of families.

D. Public policies

The ILO World Report on Child Labour 2013[11] identifies two types of policies as the most effective in reducing child labour: social protection policies and educational policies. On the one hand, social protection policies reduce the probability that families will have to resort to child labour as a survival strategy in the face of economic shocks or vulnerabilities in the life cycle. On the other hand, the existence of a free, quality, valued and pertinent educational offer affects the decision of families to invest in the education of their children as an alternative to child labour (ILO, 2013; ILO-MINTRAB, 2016; Kumari, 2013; Sauma, 2015).

Conditional and unconditional cash transfer programs have been established as the central scheme of policies to combat poverty and as an important instrument of social protection in most of the countries of Latin America and the Caribbean. The data for 2017 show that 20 countries in the region[12] have at least one program that follows this scheme, with a coverage close to 20.7% of the total population of the region, which corresponds to 133.5 million people living in 30.2 million households (ECLAC, 2019).

These programs have shown positive results in cushioning the effect of economic disturbances in households, reducing the participation of children and adolescents in child labour, hours worked, and increasing schooling (Hoop and Rosati, 2014). For example, in Panama, indigenous beneficiaries between the ages of 12 and 15 had a reduction of almost 16% in child labour and an increase of almost 8% in primary school enrolment in indigenous areas (UNICEF, 2015a). In the case of Brazil, Cardoso and Souza (2004; in UCW, 2011) find that children and adolescents from households that receive conditional cash transfers are 4% more likely to attend school than those who do not receive them. It should be noted that the impact of the program is stronger for primary education and declines throughout the educational cycle. In addition, it is important to emphasize that this type of instruments, as well as a Basic Emergency Income[13], are being proposed to satisfy basic needs and sustain household consumption to face and overcome the socioeconomic impacts of the crisis generated by COVID-19 (ILO-ECLAC, 2020).

11 See: http://www.ilo.org/ipec/Informationresources/WCMS_211966/lang--es/index.htm

12 Argentina, Belize, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago and Uruguay.

13 See: https://repositorio.cepal.org/bitstream/handle/11362/45527/5/S2000325_es.pdf

Chart No. 6

Public programs selected for their impact on child labour

Program	Impact on the reduction of child labour		Impact on education	Year of assessment
Program Families for Social Inclusion–Argentina	Yes	It discouraged the labour participation of adolescents and slightly reduced the participation of boys and girls between the ages of 3 and 13 in work activities.	—	2006
Program Coverage Extension of Secondary Education (PACES)–Colombia	Yes	It reduced the hours worked by girls by 1.5 hours per week.	School and test performance increased, as well as the rate of secondary completion.	2002 2013
Families in Action–Colombia	Yes	It reduced the participation of boys and girls aged 10 to 17 in paid economic activities in rural and urban areas (with the exception of the 14 to 17 year old group in rural areas). It reduced housework.	—	2007 2010 2012 2013
Program Elimination of Child Labour (PETI)–Brazil	Yes	It reduced child labour by 5 to 25 percentage points depending on the region; associated with the extension of the school day.	—	2002 2007 2013
Program "Bolsa Familia"–Brazil	Yes	It reduced 2% of child labour in the population between 5 and 17 years old. It reduced hours spent on housework by 4.5 hours per week. It delayed the entry of male children and adolescents into the labour market by 10 months.	—	2009 2013

Program	Impact on the reduction of child labour	Impact on education	Year of assessment
Pensions Social Scheme–Brazil	Yes	The pension benefit received by older women reduced the participation of boys and girls in paid activities.	The benefit of the pension received by senior female adults increased school attendance in the population between 10 to 14 years old.	2008 2013
Human Development Bonus–Ecuador	Yes	It reduced the participation rate in economic activities	Enrolment rate increased.	2006 2011
Social Assignment Program II (PRAF-II)–Honduras	No	There was no evidence of impact on the reduction of child labour or on the school enrolment or retention rate.		2006 2013
Program Progress through Health and Education (PATH)–Jamaica	No	There was no evidence of impact on the reduction of child labour or on the school enrolment or retention rate.		2013
Human Development Program Opportunities / Prosper–Mexico	Yes	It reduced by 8% the participation of children between 12 and 14 years old in economic activities in the 1st year; 14% in the 2nd year; in women aged 15 to 18 years, the reduction was 11% in the 1st year.	—	2001 2007 2010
Social Protection Network–Nicaragua	Yes	Increased school enrolment and permanence up to 6th grade in children ages 7 to 13.	—	2005 2013
TEKOPORA Project–Paraguay	Yes	—	The probabilities of permanence in the school system increased for families in extreme poverty.	2008

Program	Impact on the reduction of child labour		Impact on education	Year of assessment
Program Together–Peru	Yes	It reduced the incidence of child labour. Beneficiaries were 35.5% less likely to carry out paid activities outside the home.	It did not in itself promote schooling because the majority of the beneficiaries studied.	2009 2011
Program Labour Training for Young People -Projoven–Peru	No	The total job placement or insertion rate of the population that received vocational training was 11%.		2006 2011
National Plan for Crises Attention (PANES)–Uruguay	No	There was no evidence of impact on the reduction of child labour or on the school enrolment or retention rate.		2008 2013

Source: ILO/Cheng 2015

However, nowhere do they achieve the eradication of child labour, which indicates that by themselves they do not constitute a sufficient political response (ILO, 2013). According to Sauma (ILO, 2015), other factors such as the percentage that the transfer represents in family income, the educational level of the parents, the conditions of access and quality of education, the availability of school reinforcement services, recreation and rest for the population that studies and works, influence the level of effectiveness of these programs.

Studies that have evaluated the effects of cash transfer programs in reducing child labour indicate that they are more effective when they target the poorest population and when they are associated with some programmatic offer, for example, school attendance or to health check-ups, as long as services are available to families. The Program for the Eradication of Child Labour in Brazil (PETI), articulated with the Bolsa Familia transfer program, which included a mandatory program of after-school classes that doubled the length of the school day for boys and girls, reduced child labour by 5 percentage points in the Pernambuco district and 25 percentage points in the Bahia district (Yap et al., 2002; in ILO, 2013).

Other social protection policies that affect the reduction of child labour are those that make it possible to cushion vulnerability during the life cycle. For example, health insurance, income security in old age, unemployment protection policies, and disability policies.

On the contrary, some studies suggest that transfers are less effective when they are invested in productive activities, since these investments favour the participation of boys, girls and adolescents in family work (ILO, 2013). The evaluation of the program Atencion a la Crisis in Nicaragua, for example, which considered the subsidy for productive investments, indicated that this additional element considerably reduced the impact of the program on child labour (Del Carpio and Loayza, 2012; in ILO, 2013) .

Other social protection policies that affect the reduction of child labour are those that make it possible to cushion vulnerability during the life cycle. For example, health insurance, income security in old age, unemployment protection policies, and disability policies. As will be explained later, at the household level the presence of sick people in the family, the elderly or people with disabilities, increase the probabilities of child labour, especially for girls and female adolescents, who take charge to a greater extent of care work inside the home.

Available data for Guatemala and Pakistan (ILO, 2013) indicate that providing families with health insurance can reduce dependence on child labour. Along the same lines, studies carried out in Zambia and Togo show the existence of households that respond to health problems by sending their sons and daughters to work (ILO, 2013).

Furthermore, studies carried out in Nepal, Bangladesh and Gansu Province in China (ILO, 2013) have revealed that children from households with sick or disabled adults, or those who do not have work, are more likely to be forced to work, either outside the home or in housework. In multigenerational households, common in Latin America and the Caribbean, secure income in old age can mean economic stability for the household as a whole and thus reduce the likelihood that children will be sent to work.

Regarding educational policies, there is abundant evidence that accounts for the inverse relationship between school attendance and child labour, mainly in low-income countries (Fallon and Tzannatos, 1998; in Acevedo et al., 2011), becoming a key dimension in prevention and eradication of child labour.

For educational policies to have an impact on reducing child labour, it is key that the educational offer is close to families. The case studies in India, where the value of education was increased by an increase in technology in the local market and in the demand for skilled labour, show that the impact of these transformations on child labour depends on the availability of schools in the area (ILO, 2015). In any case, the offer by itself does not ensure the reduction of child labour until there is recognition of the value of education to improve living conditions. According to Canagarajah and Coulombe (1997; in Acevedo et al., 2011), the weak relevance of education in the countries has pressured the entry of boys, girls and adolescents into the labour market.

On the other hand, the literature highlights the high costs of education and the low quality as one of the main determinants of household decisions about sending boys and girls to school or the labour market (Jensen and Nielsen, 1997; Canagarajah and Coulombe, 1997; in Acevedo et al., 2011). Indeed, the countries' per capita spending on education can give an image of the relevance that the States assign to it. Sauma (ILO, 2015) finds that countries with the highest per capita spending on education have a lower incidence of child labour and vice versa.

Improving secondary and vocational education and increasing its pertinence and relevance in local markets could increase the appreciation of parents for the education of their children and decrease the prevalence of child labour, while improving youth employment conditions. In this way, educational policies that ensure the availability of quality educational offer, pertinent and articulated to local demands, have a high probability of influencing the reduction of child labour.

Finally, it is considered that national and local entities have a wide range of public, social protection and educational instruments to operationalize their goals of eliminating child labour: *"The challenge is to coherently articulate these programs with child labour reduction policies, which includes the improvement of mechanisms for identifying the population; inter and intra institutional coordination and management; investment in infrastructure and conditions of access to the school system; as well as the implementation of innovative educational strategies that improve school performance, the relevance of the contents and the use of free time for recreation and personal development"* (ILO-MINTRAB, 2016, p.20).

2.2 Factors associated with family and individual character

A. Poverty and vulnerability

The academic and political discourse regarding child labour has focused on the variables of income and poverty to explain the phenomenon. To date, a large number of studies have verified the influence of family poverty by income in the decision that boys, girls and adolescents enter the labour market. In turn, some research shows how this relationship is modified and even in particular cases is reversed, depending on its interaction with other factors. Indeed, a key work in this discussion is that carried out by Basu and Van (1998), who develop the hypothesis "Luxury axiom". This premise indicates that for all households there is a critical salary that determines whether or not the household will send boys and girls to the labour market (Acevedo et al., 2011).

Under this premise, a wide range of research has accumulated that seeks to specify the relationship between income, poverty and child labour. Country studies conducted by Understanding Children's Work (UCW, 2009; in ILO, 2013) reveal that, all other things being equal, poor boys and girls are more likely to work than their better-off peers. In the Sub-Saharan region of Africa, Admassie (2002) finds that the high rate of child labour in the region can be explained, among other things, in terms of the high incidence of poverty. Amin, Quayes and Rives (2004; in Acevedo, 2011), when studying the determinants of child labour in Bangladesh, support the notion that family poverty affects the probability of a child working. The statistical analysis of Kumari (2013) for Cuttak, India, shows that an increase in family income significantly reduces the hours of child labour. Del Río and Cumsille (2008), in a study in Chile, find that economic reasons are still the main driving force behind child labour in some of the most vulnerable groups. Along the same lines, the analyses carried out with data from families in the Colombian Caribbean indicate that while boys, girls and adolescents between 10 and 14 years old contribute 10% of the total household income on average, this fraction is around 25% in the poorest households, which reveals the central role that child labour plays in the reproduction of poor households (Amar et al., 2012).

Another series of studies indicates that poverty alone does not explain the persistence of the phenomenon and even, in some circumstances, its decrease would increase child labour. Sauma (ILO, 2015), when observing the correlation between the decrease in poverty in the countries of Latin America and the Caribbean and the prevalence of child labour, shows that the reduction of poverty has not gone hand in hand with the same reduction in the rate of child labour. For example, Bolivia and Peru, despite strong reductions in poverty between 2000 and 2012, increase the rate of child labour.

Along the same lines, the decrease in child labour and the increase in school attendance in Brazil were much more intense in the poorest segment of the population than in the richest counterpart, where small changes are observed for all periods measured (UCW, 2011). Therefore, the impact of poverty on child labour is conditioned by various factors, requiring complementary actions to the policies to overcome poverty.

In this sense, some authors (Bhalotra and Heady, 2001; Basu, Das and Butta, 2007; Bar, Basu, 2009; in Acevedo et al., 2011) have drawn attention to what they call "the paradox of wealth". Specifically for the agricultural sector, as land tenure increases, so does child labour. López-Ávila (2009) deepens the discussion by distinguishing between work outside the home and within the home. In Colombia, for work outside the home the luxury axiom hypothesis is satisfied (the less wealth, the more child labour), but for work in a family business the paradox of wealth would be verified: the greater the wealth, the more child and adolescent labour.

On the other hand, the analysis of the intergenerational transmission of child labour (Ray, 2000; Emerson and Souza, 2003; in Acevedo et al., 2011) indicates that, although income has a significant effect on the transmission of child labour, by itself it cannot explain the degree of persistence of the phenomenon. Furthermore, it is essential to highlight the existence of circumstantial factors that can significantly increase this possibility at specific moments in time. Here, the concept of vulnerability provides valuable tools for this analysis and the early identification of possible events with a potential destabilization in the level of well-being of households and in their decisions about child labour.

In simple terms, vulnerability accounts for the fragile response capacity that individuals, households and communities have in the face of events that constitute risks and shocks. These events can precipitate decisions with a high impact on the level of well-being within households and of children and adolescents. In particular, the effects of economic crises, climate change, natural disasters and phenomena such as migration can be substantive in household decisions regarding child labour.

Indeed, a key work in this discussion is that carried out by Basu and Van (1998), who develop the hypothesis "Luxury axiom". This premise indicates that for all households there is a critical salary that determines whether or not the household will send boys and girls to the labour market.

As ILO (2013) indicates, child labour constitutes a possible response of affected households to adverse events such as the occurrence of droughts, floods or crop losses. In Guatemala, for example, Storm Stan increased the probability of child labour in affected areas by more than 7% (Bustelo, 2011). Studies developed for the cases of Brazil and Venezuela show how a drop in employment leads to higher rates of school dropout and an increase in child labour in the event of economic shocks (Duryea et al., 2007 and Blanco and Valdivia, 2006; in ILO, 2013).

Likewise, there is ample evidence accumulated in the region on the impacts that economic crises and adjustment policies and fiscal cuts have had on household welfare, including the increase in child labour (Cornia et al., 1987). The effects documented after the global economic crisis that exploded in 2008 included the reduction and precariousness of sources and opportunities of employment. Faced with the fall in family income, as a result of the loss of jobs, its greater volatility and the growing difficulty in facing the costs related to the education of children and adolescents, there was an increase in school dropout rates and growing rates of child labour in Bangladesh, Cambodia, El Salvador, India, Kenya, Nicaragua, Nigeria, Thailand and Zambia (Ortiz and Cummins, 2012).

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Likewise, migration, particularly irregular and unaccompanied, is another phenomenon that increases the chances of child labour. Indeed, in the world, many migrant children end up working in the agricultural sector or in the service sector, for example, in domestic work. In addition, it has been shown that, among working boys and girls, migrants are those who receive the lowest salary, who work longer hours, who attend school with greater irregularity and who face a higher mortality rate compared to the local child population. (ILO, 2012). Although there are no statistics that allow us to know the quantity and characteristics of this population in Latin America and the Caribbean, the information on those detained and returned to their countries of origin makes it possible to have

an idea of how serious this phenomenon is. For example, by 2016, it was estimated that more than 70 thousand underage persons (mostly between 14 and 17 years old) unaccompanied migrants from Honduras, El Salvador and Guatemala tried to enter the United States illegally (ILO, 2016b).

It should be noted that the vulnerability to which households are exposed will depend not only on the transitory events that may occur, but fundamentally on their capacity to respond to them. It combines both the availability of assets that can be mobilized, such as access to credit or property and the institutional responses that have been arranged in the face of risks through relevant public policies, in this case, prevention of child labour or the current institutions for its prevention and eradication.

B. Family and household characteristics

The composition of the household, the characteristics of its members and the conditions in which they develop are relevant factors when explaining how families make decisions about child labour.

A very relevant and widely studied factor is the educational level of the parents. The literature indicates that parents with lower educational levels are more likely to prefer that their children enter the labour market rather than the school system. In the same vein, faced with an economic shock, a positive assessment of education would make parents postpone the decision to send their children to work. In turn, the educational level of parents is closely related to the interest shown by the boy, girl or adolescent for school.

A study carried out in Nicaragua (Bonilla, 2010) indicates that the higher the level of education of the head of household (secondary or higher educational level), the probability that the child will work is reduced by 51%. In Colombia, the educational level of the head of the household is statistically significant and exhibits the expected signs: the higher the education, the lower the probability that a boy or girl will work (Amar et al., 2012). On the other hand, in a study carried out by Salazar (1990; in Amar et al., 2012), in the quarries of the northeast of Bogotá, found that around half of the parents of working children never entered the school. Those who entered did not complete their studies and were linked to work early. In Brazil, it is found that the education of the head of household has a positive and significant effect in reducing child labour: families where the head of the household has a primary education, boys and girls are less likely to work and more possibilities of attending school, than those boys and girls with illiterate parents. The same correspondence is observed for heads of households with secondary education, with regard to those who have reached only primary education (UCW, 2011).

Some research has delved into the differentiated incidence that higher degrees of education of the mother or father can have. In this regard, there is no consistent information. Some authors indicate that the higher levels of education of the mother have a greater impact on the attendance of boys and girls to school. Ribero (2001; in Amar et al., 2012) finds that each additional year of education for Colombian mothers increases by 5% the probability that their son or daughter will attend school at the appropriate level for their age.

On the other hand, the occupational status of the parents is closely related to the level of household income and, thus, to the probability of child labour. In general, it is argued that employed fathers and/or mothers decrease the probability of child labour as families have higher incomes. A study in Argentina highlights the positive effect that the fact that the household had a member employed in a sheltered job had, both on the permanence in the educational system and on the economic inactivity of boys and girls (Bonilla, 2010). On the other hand, a study in Nicaragua (Hoop et al., 2015) shows that the participation of poor rural women in a productive program in Nicaragua increases the school attendance of their sons and daughters, although the program did not have this associated conditionality.

But the same does not happen with regard to paid child domestic labour, where there is evidence that it increases when parents are engaged in the same activity. A study in Brazil (DeGraff and Levison, 2009; in Amar et al., 2012) found positive and significant correlations between working mother and working child. The authors argue that it may be due to the fact that women's work is linked to domestic aspects or family businesses, where it is easier to link children, especially female daughters. In the case of the working father, there are cultural relationships, since most of the time he thinks and says that the child should work to help the family in economic activity, because he wants to have his own money or because he should help with household expenses, among other reasons (Amar et al., 2012).

Household configuration varies the likelihood of child labour. Various studies in the region indicate that boys and girls from single-parent households are more likely to enter the labour market than those from two-parent households (Amar et al., 2012; Bonilla, 2010). More specifically, in the Colombian case, it was found that the absence of the father figure is correlated with child labour.

The size of the family also affects the allocation of time for sons and daughters. In the model made by Kabir (2013), the increase in family size increases the working hours of children and adolescents. In a study in Brazil, Levison (1991; in UCW, 2011) indicates that child labour increases along with the number of children in the family, especially if they are of preschool age. The author argues that

In the region, those who live in rural areas are more likely to engage in child labour. Indeed, most of the boys and girls (predominantly boys) who work in agricultural work (60% of all child labour) live in rural areas, and a large part do so in the worst forms of child labour.

fathers/mothers of large families, in vulnerable contexts, can diversify their children's investment of time, allocating some to housework, others to work in the labour market and others to education.

These decisions also depend on the place that the child occupies in the family. Cigno and Rosati (2001; in Brown, 2002) point out that families are more likely to invest in the human capital of their youngest sons and daughters when the oldest is already working and the family budget is more comfortable. Emerson and Souza (2008; in UCW, 2011) show that older children —both men and women— will be less likely to attend school than siblings born later.

On the other hand, the immigrant status of a family can cause boys and girls to enter the labour market as an adaptation and survival strategy. In the Latin American context, the high rates of displaced persons due to armed conflicts and violence, the high proportion of migration due to poverty and the worrying levels of insecurity, make it necessary to take this aspect into consideration. As Pinzón et al. (2006, 2003; in Acevedo, 2011), about 25% of the boys and girls who work in street vending in the capital cities of Latin America say they are displaced by violence or poverty, while for those who work in peddling in the streets of Bogotá, this percentage stands at 50%.

Finally, the place of residence of the family (urban or rural) also affects the probability that the boy, girl or adolescent performs child labour and, furthermore, determines the type of activity that he/she performs. In the region, those who live in rural areas are more likely to engage in child labour. Indeed, most of the boys and girls (predominantly boys) who work in agricultural work (60% of all child labour) live in rural areas, and a large part do so in the worst forms of child labour. Many do not receive remuneration for their tasks, since they work mainly supporting their fathers, mothers or relatives (ILO/FAO, 2013). For their part, those who reside in urban areas, mostly are engaged in activities associated with trade and industries.

C. Characteristics of the boy, girl or adolescent (male or female)

Within individual characteristics, most of the studies mention the following: age, school attendance, educational level, sex, and ethnic/racial origin.

Regarding age, various studies show that the older the person is, the more prone to participating in child labour (Kumari, 2013; Bonilla, 2010; Villazhañay, 2014; Del Río and Cumsille, 2008; Ureña et al., 2009; Muñoz, 2014; UCW, 2011).

School attendance appears as a protective factor against child labour in two ways. In the first place, with more years of education there is less probability of participating in the labour market. Along with the above, school attendance reduces the probability of participating in the labour market, because they are activities that compete for the available time of children and adolescents (Kumari, 2013; Bonilla, 2010; Villazhañay, 2014; Del Río and Cumsille, 2008; Ureña et al., 2009; Muñoz, 2014; Canagarajah and Coulombe, 1997; Khanam, 2007; in Acevedo, 2011). Along the same lines, from the ILO's approach, education is seen as the main factor to prevent, reduce or eradicate child labour, especially primary education (ILO, 2016a).

Sex also affects child labour. Indeed, child labour has a clear gender bias that is expressed in different opportunities for boys and girls throughout their childhood and adolescence and that affects their possibilities for later development.

In accordance with gender stereotypes that determine different roles for men and women, in the countries of the region it is observed that boys and male adolescents are more exposed to paid work outside the home and that girls and female adolescents bear the burden of unpaid housework, whether in their own or someone else's homes (Montaño and Milosavjlevic, 2009). In the case of Nicaragua, for example, men are almost three times more likely to participate in the labour market than women (Bonilla, 2010). For Brazil, men are more likely to enter the labour market than women and their participation increases sharply between the ages of 16 and 17, where it is around 42% compared to 25% for women (UCW, 2011). In the case of Chile, in 2003, of the total number of employed children, only 33% were women. However, more than 90% of those under 17 years of age who performed household chores were girls and female adolescents (Del Río and Cumsille, 2008).

These data lead to reaffirm what has already been indicated by the ILO (2013) regarding the large gaps left by the analysis of child labour in relation to domestic work, since most evaluations only take into account work in the market, ignoring both child domestic work (on behalf of a third party), as

well as domestic chores in the home, which preferentially affect women. Likewise, it is relevant to note that female girls and adolescents are especially vulnerable to the worst forms of child labour, such as commercial sexual exploitation and hidden forms of child labour, such as domestic work in the homes of third parties (ILO, 2015).

Ethnic/racial belonging also affects child labour. The indigenous and Afro-descendant population throughout the region is in a particular situation of exclusion and vulnerability. This lack of equity influences the insertion of children and adolescents into the labour force, as well as the type of tasks they perform or the working conditions. In Peru, 20% of the workers in the gold laundries located in Madre de Dios are indigenous children between 11 and 17 years old. In northern Mexico, approximately 32% of the total indigenous workforce is made up of indigenous children. On the other hand, in Brazil, Afro-descendant boys and girls are more likely to work (4%) and less likely to attend school (4%) in relation to the white child population (UCW, 2011).

Finally, the decision within households on the early labour insertion of boys, girls and adolescents is closely linked to the prevailing social and cultural norms on child labour (ILO, 2013). The role of culture cannot be underestimated in the analysis of the factors that influence this phenomenon and that can facilitate or hinder its eradication. Social norms are constituted, in this way, in rules or expectations of conduct within a specific social or cultural group (UNICEF, 2015a), which must be considered when analysing possible obstacles to guarantee the exercise of children's rights, girls and adolescents.

The role of social norms, for example, has been analysed as a possible barrier to achieving gender equality in access to education or intervening in the early sexual division of productive and reproductive work between men and women. Social and cultural norms can be linked to the greater or lesser value of education and its future return in the face of early labour insertion of children and adolescents (ILO, 2013). Likewise, the value assigned to work as a training space from childhood in specific communities has been emphasized. Thus, for example, studies have revealed the higher prevalence of child labour among boys, girls and adolescents belonging to indigenous peoples and traditional communities in Latin American and Asian countries (Edmonds, 2003; Patrinos and Shafiq, 2008; Tuttle, 2006) .

These are relevant elements when designing specific intervention strategies aimed at the prevention and eradication of child labour with cultural relevance, through awareness-raising and education programs that clearly communicate under what conditions the activities carried out by girls and boys and adolescents are classified as child labour and its present and future consequences.

3

CHILD LABOUR MEASUREMENT AND ITS INFORMATION SOURCES

Latin America and the Caribbean is one of the regions in the world that shows the greatest progress in national measurements of child and adolescent labour. To date, at least 27 countries[14] in the region have developed and applied specific surveys and/or modules attached to household surveys on this issue, being able to make the issue visible and position it on the public agenda of the countries. This achievement is due, to a large extent, to the work that the different countries have done in conjunction with international cooperation. An example of this has been the work of the ILO, which has promoted the development of statistics in practically all the countries of the region through the International Program for the Elimination of Child Labour (IPEC) and, specifically, through the Information Program Statistics and Monitoring in the Matter of Child Labour (SIMPOC).

This section examines the different elements present when measuring child labour, among which issues related to the statistical definition and the sources of information available for such measurement stand out.

3.1 Statistical definition of child labour

To date, there is no standardized statistical definition in the countries of the region on child labour (ILO, 2013). International legal norms grant national legislators some flexibility to set precise norms and limits with a view to determining what forms of work and employment of children and adolescents should be included in child labour and be, ultimately, prevented and eradicated (ILO, 2009). However, the constituent elements of the definition are generally common and are guided by the recommendations made by the International Conference of Labour Statisticians (ICLS). International standards on child labour statistics were approved in 2008, at the 18th International Conference of Labour Statisticians (ICLS), and updated at its 19th ICLS (2013) and at the 20th ICLS (2018)[15].

14 Argentina, Barbados, Belize, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Saint Lucia, Suriname, Uruguay, Venezuela (Bolivarian Republic of).

15 For greater detail on these recommendations, see, for example, the resolution on child labour statistics, adopted in the 18th International Conference of Labour Statisticians (Geneva, 2008) and the 20th International Conference of Labour Statisticians (Geneva, 2018).

In this sense, and following the criteria recommended by the ILO (2018), not all boys, girls and adolescents who carry out productive activities are immersed in child labour. The "child labour" that is being eradicated corresponds to the following categories:

a. worst forms of child labour;
b. working within the production limit of the System of National Accounts (SNA) carried out by boys and girls below the minimum age established by the countries; and
c. unpaid hazardous household services.

Work performed by persons under 18 years of age who meet the national minimum age for admission to employment and do not correspond to hazardous work or in a worse form is not considered "child labour" and, therefore, its eradication is not sought.

Bearing this in mind, in general, the statistical reference framework used to measure child labour in the countries is structured around two main elements, namely: i) the age of the child, or adolescent, and ii) the work activities of the child or adolescent, including their nature and the conditions in which they are carried out, and the duration of the child's participation in said activities.

In relation to age, and in accordance with ILO conventions, all persons included in the age group 5 to 17 years will be considered, in which age is measured based on the number of years of age. The minimum age is defined in accordance with the provisions of the legislation of each country. In the region, the minimum age for admission to employment varies between 14 years and 16 years, as explained in the previous section. In addition, in some countries of the region, national laws also allow employment in light[16] jobs and / or vocational jobs under the age mentioned above, as long as these are not likely to harm the health or development of the child or the adolescent or their attendance at school[17].

On the other hand, productive activities comprise any activity carried out by children and adolescents within the general production boundary established by the System of National Accounts (SNA) for at least one hour during the reference period, regardless of whether or not they receive monetary or in-kind remuneration.

On the other hand, productive activities comprise any activity carried out by children and adolescents within the general production boundary established by the System of National Accounts [18] (SNA) for at least one hour during the reference period, regardless of whether or not they receive monetary or in-kind remuneration.

16 Allowed light work is defined as any non-hazardous work carried out by boys and girls (12 to 14 years) during less than 14 hours a week of reference. The threshold of hours and the age segment have been used in previous global estimates of the ILO.

17 Usually, one can distinguish light work from non-light work on the basis of the work-time thresholds that are applied to all children who work, regardless of the fact of whether they attend school or not (ILO, 2009).

18 Work within the limits of production of the SNA includes the work of employment, the production of goods for one´s own use, non-remunerated work in practices, volunteer work in market and non-market units and volunteer work in the domestic production of goods, according to Resolution 19 of the ICLS on work, employment and labour sub-utilization statistics, 2013. Thus, it excludes the domestic service performed within one´s own household, as well as the activities that are part of their school education.

A graphic view of this broad definition can be seen in the following diagram:

Chart No. 7

Classification of broad child labour according to the System of National Accounts (SNA)

Age group (Ages differ among countries)	General Protection Borderline					
	Production within the SNA				Production outside the SNA	
			Worst forms of child labour			
	(1 a) * Light work	(1 b) Regular work	(2 a) Hazardous work	(2 b) Worst forms of child labour not designated as hazardous work	(3 a) Non remunerated domestic services of a hazardous nature	(3 b) Other production activities outside the SNA
Children that do not reach the minimum age specified for light work	Employment under the age required for light work	Employment under the general minimum age for working	Hazardous work (in industries and occupations indicated as hazardous)	Children who are the object of human trafficking for labour; forced labour or bonded labour; commercial sexual exploitation; use of children in illicit activities and in armed conflicts	Production of services for own use or volunteer work in domestic production services for long hours; involving unsafe equipment or heavy loads; in dangerous places; etc.	
Children within the age category specifed for light work						
Children that have reached the general minimum age for working						

Source: International Labour Organization, 2009

Note 1: The shaded area indicates child labour to be abolished, in the broad definition. A more restricted definition will be considered following the legislation of each country.

Note 2: Many countries in Latin America and the Caribbean, for example, Brazil, do not recognize the category of "light work". Therefore, its measurement will be subject to the legislation of each country.

Note 3: Category (3a) is applicable when the overall production limit is used as a measurement framework for child labour. In this category, the threshold for long hours of work in unpaid domestic services must take into account the age of the child and the accumulated hours worked in employment and in other forms of work in SNA and non-SNA production.

3.2 Information sources

As mentioned at the beginning of the section, to date, at least 27 countries in the region have applied specific surveys and/or modules attached to national household surveys that make it possible to measure child labour. In addition to these, there are other information instruments, which in some cases make it possible to measure the incidence of child labour or, failing that, provide relevant information about the associated factors, such as population and housing censuses and administrative records. The descriptions and characteristics of each of them are detailed below:

A. Surveys and/or modules that allow measuring child labour

In general, the countries of the region have opted for 2 main modalities to measure child labour through surveys:

i. ***The specific child labour surveys*** are efforts of the countries, generally supported technically and financially by international organizations, without regularity over time, with questionnaires specifically elaborated to measure the magnitude, characteristics and causes of child labour. In addition to collecting information about working conditions, occupations, category in employment, among other characteristics of this condition. The questionnaires also attempt to collect information on the demographic and social aspects of the home, as well as the factors that lead children and adolescents to work (SIMPOC, 2008).

The questionnaires also attempt to collect information on the demographic and social aspects of the home, as well as the factors that lead children and adolescents to work.

ii. On the other hand, the countries measure child labour based on ***modules and/or questions included in the national household surveys.*** The objective of these surveys is "to provide reliable demographic and socioeconomic information between inter-census periods and to satisfy the demand for information in relation to the design and evaluation of economic and social policies" (ECLAC, n.d.). These types of surveys are among the three main sources of statistical information on social issues in the countries, since they provide a cheaper alternative to population and housing censuses when it comes to obtaining timely and more detailed data than administrative records systems. (United Nations, 2009).

Box No. 1

Multiple Indicator Cluster Surveys (MICS)

In addition to the household surveys carried out periodically by the governments, there is another series of instruments, financed or guided by different cooperation agencies, which make it possible to measure child labour. One of these instruments is the Multiple Indicator Cluster Surveys (MICS). It is a household survey program that UNICEF developed with the objective of knowing the situation of children and women in areas such as health, nutrition, education, social protection, child labour, among others.

MICS surveys follow an international format that has been applied in more than 40 countries, with questionnaires designed in a modular format. In general, they have three questionnaires, one on the home and the family (which asks about child labour), another on women between 15 and 49 years of age, and another on those under five, which the mother or another caregiver answers.

Regarding the questions on child labour, it includes only a group of minimal questions that were designed to obtain information about the prevalence and do not assess the risks faced by working children and adolescents, for example, if their occupation is of hazardous character.

Source: UNICEF, 2015b

The main advantage of using household surveys to measure child labour is that the private household is the most appropriate unit to identify boys, girls and their families. This type of instrument allows, therefore, *"except in regard to special categories of child labour–such as the work of children living on the street or of those who are engaged in the worst forms of child labour not indicated as hazardous labour"*- (ILO, 2009), to estimate its incidence and be able to compile a great diversity of demographic and socioeconomic statistics about them and their parents.

Chart No. 8

Latin America and the Caribbean (27 countries): Surveys and/or modules to measure child labour

Countries	Name of the survey/module	Year
Argentina	EANNA	2017
Barbados	Multiple Indicator Cluster Survey (MICS/UNICEF)	2012
Belize	National Survey of Children´s Activities	2013
Bolivia (Plurinational State of)	Child Labour Survey (ETI)	2008
Brazil	PNAD	2016
Chile	EANNA	2012
Colombia	GEIH	2017
Costa Rica	ENAHO	2016
Cuba	Multiple Indicator Cluster Survey (MICS/UNICEF)	2014
Dominican Republic	ENHPM/MICS	2010 / 2014
Ecuador	ENEMDU	2016
El Salvador	EHPM	2015
Guatemala	ENCOVI	2014
Guyana	Multiple Indicator Cluster Survey (MICS/UNICEF)	2014
Haiti	Demographic Health Survey (DHS)	2012
Honduras	Multiple Indicator Cluster Survey (EPHPM)	2017
Jamaica	Survey of Children's and Adolescents' Activities	2016
Mexico	ENOE	2016
Nicaragua	Demographic Health Survey (DHS)	2001
Panama	Child Labour Survey (ETI)	2016
Paraguay	EANA (Rural)	2015

Countries	Name of the survey/module	Year
Peru	Child Labour Survey (ETI)	2015
Saint Lucia	Multiple Indicator Cluster Survey (MICS/UNICEF)	2012
Suriname	Multiple Indicator Cluster Survey (MICS/UNICEF)	2010
Trinidad and Tobago	Multiple Indicator Cluster Survey (MICS/UNICEF)	2011
Uruguay	National Child Labour Survey (ENTI)	2009-2010
Venezuela (Bolivarian Republic of)	Multiple Indicator Cluster Survey (MICS/UNICEF)	2000

Source: Author´s own compilation based on the reports of the countries themselves

However, there are at least three major limitations of the indicators that are based on household surveys. The first is that this type of survey does not provide information on some of the worst forms of child labour, for which the application of alternative methodologies is required (for example: boys and girls victims of commercial sexual exploitation, slavery, street children, among others) (ILO, 2013). Indeed, these forms of child labour tend to be hidden and in many countries of the region, the incidence of these forms constitutes a very small percentage of total child labour, which is why it could hardly be captured through household sampling.

The second limitation is associated with the level of representativeness. In general, household surveys allow the information to be disaggregated and, therefore, to measure the incidence of the phenomenon of child labour only up to the highest administrative level (region, province, department, etc.), therefore the information to local level remains invisible.

The third limitation is related to the fact that most household surveys were not designed to measure child labour, both in the associated variables and in the necessary sample sizes, so that the results could have sampling biases and non-quantifiable statistical errors, generating an underestimation of child labour in the countries.

B. Population and housing censuses

Population and housing censuses play an important role in Latin America and the Caribbean, as they are the basis of the National Statistical System and are the only instrument capable of providing reliable data for lower levels of geographic disaggregation and for small populations (CELADE, 2013). Censuses are carried out by the National Institutes of Statistics of the countries with a periodicity of approximately 10 years, with the main objective of providing information about the dwellings, households and people of a country. In Latin America and the Caribbean, the most recent application was around 2010, even though it varies between the different countries of the region as detailed in the following table:

Chart No. 9

Latin America and the Caribbean (28 countries): Population and housing censuses

Countries of Latin America and the Caribbean	Census
Argentina	2010
Bahamas	2010
Barbados	2010
Bolivia (Plurinational State of)	2012
Brazil	2010
Chile	2017
Colombia	2018
Costa Rica	2011
Cuba	2012
Dominican Republic	2010
Ecuador	2010
El Salvador	2007
Guatemala	2018
Grenada	2011
Guyana	2012
Haiti	2014
Honduras	2013
Jamaica	2011
Mexico	2010
Nicaragua	2005

Countries of Latin America and the Caribbean	Census
Panama	2010
Paraguay	2012
Peru	2017
Saint Lucia	2010
Suriname	2010
Trinidad and Tobago	2010
Uruguay	2011
Venezuela (Bolivarian Republic of)	2011

Source: Author´s own compilation, based on the reports of the countries themselves

Although these instruments were not conceived to measure child labour, nor do they provide information on hazardous work, they allow -in many countries- to quantify and characterize the number of children and adolescents engaged in paid and unpaid work, being able to obtain estimates with higher levels of geographic disaggregation than surveys (for example, at the municipal level).

Chart No. 10
Latin America and the Caribbean (18 countries): Questions regarding employment in the census questionnaires

Country	Year	Minimum age regarding employment questions	Occupational category	Branch of economic activity	Hours assigned	Income
Argentina	2010	14 years-old	Yes	Yes	No	No
Bolivia (Plurinational State of)	2012	7 years-old	Yes	Yes	No	No
Brazil	2010	10 years-old	Yes	Yes	Yes	Yes
Chile	2002	15 years-old	No	Yes	No	No
Colombia	2018	5 years-old	Yes	Yes	Yes	No
Costa Rica	2011	12 years-old	Yes	Yes	No	No
Dominican Republic	2010	10 years-old	Yes	Yes	No	No
Ecuador	2010	5 years-old	Yes	Yes	Yes	No
El Salvador	2007	10 years-old	Yes	Yes	Yes	No
Guatemala	2018	7 years-old	Yes	Yes	No	No

Chart No. 10
Latin America and the Caribbean (18 countries): Questions regarding employment in the census questionnaires

Country	Year	Minimum age regarding employment questions	Occupational category	Branch of economic activity	Hours assigned	Income
Honduras	2013	5 years-old	Yes	Yes	No	No
Mexico	2010	12 years-old	Yes	Yes	Yes	Yes
Nicaragua	2005	10 years-old	Yes	Yes	Yes	No
Panama	2010	10 years-old	Yes	Yes	No	Yes
Paraguay	2012	10 years-old	Yes	Yes	No	No
Peru	2007	6 years-old	Yes	Yes	No	No
Uruguay	2011	12 years-old	Yes	Yes	No	No
Venezuela (Bolivarian Republic of)	2011	10 years-old	Yes	Yes	No	Yes

Source: Author´s own compilation based on the census vouchers of each country

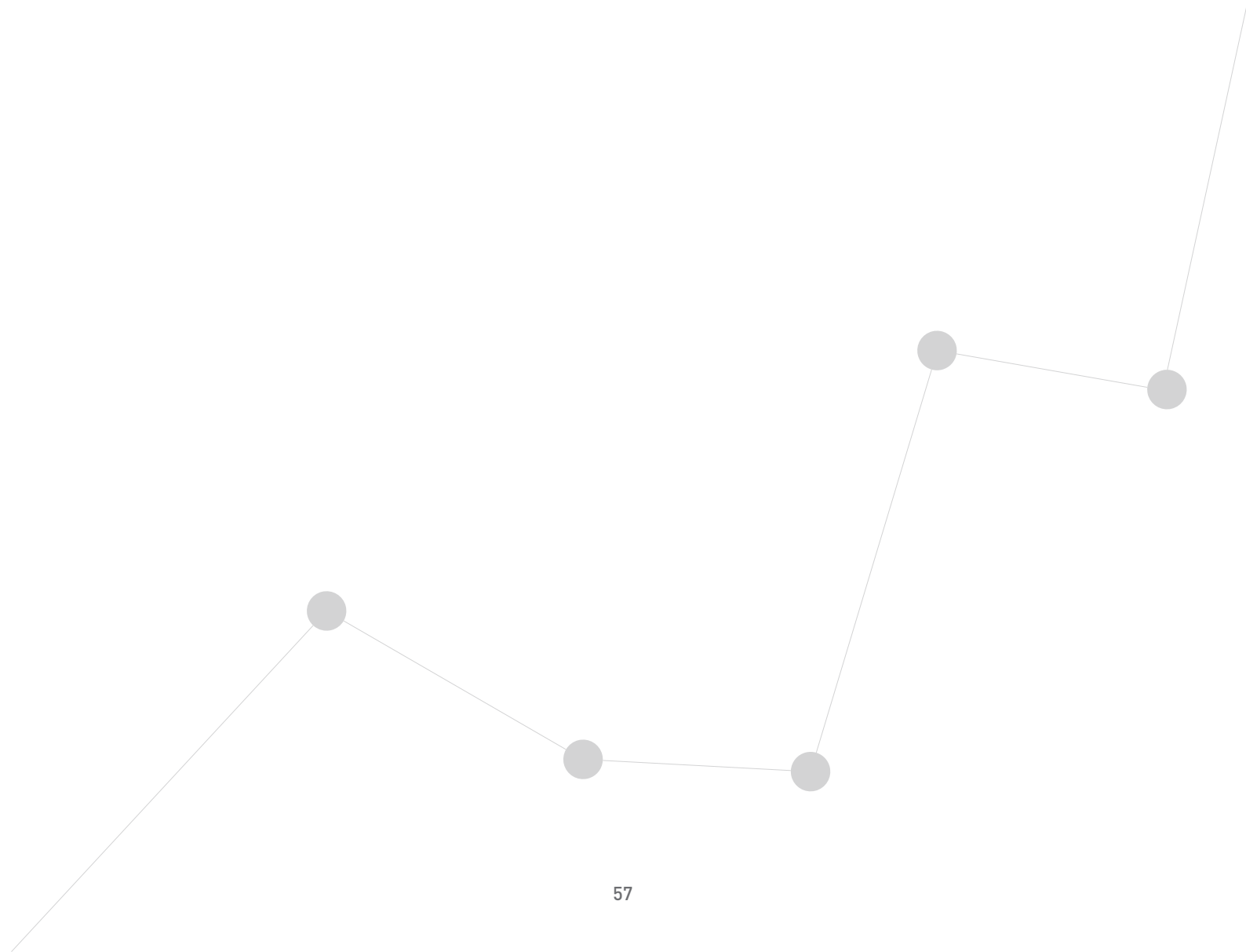
Regarding the minimum ages established for drafting the questions regarding employment, these vary from 5 years to 15 years, an age set in most countries as the legal minimum to work. In general, the information collected in this section is related to job tenure, occupational category (employee, employer, self-employed, family member, etc.), economic branch (agriculture, commerce, services, etc.), and hours spent on the main occupation and earned income.

C. Administrative records

Another valuable source of information that countries have to measure or contextualize child labour in the territory are administrative records. These are data collected *by "public or private institutions on an action, fact or event due to their own management control"* (DANE, 2010). In general, these data are collected continuously in order to make the administration of government programs visible or to support a process of the institution, therefore, the record does not constitute in itself a statistic, but can be transformed to become such (INE, 2015).

Among the advantages of using administrative records are that they are a low-cost source of data (once implemented) compared to censuses and surveys; they provide statistics with wide possibilities of disaggregation; they do not contain sampling errors and avoid duplication of efforts between the different government agencies (INEC, 2012; INE, 2015; DANE, 2010). In this sense, the use of administrative records for statistical purposes serves to complement and often to replace the use of surveys.

Notwithstanding the foregoing, as its purpose is mainly administrative, for its use it is necessary to evaluate its conceptual and methodological basis, classifications, coverage achieved, quality of responses, data processing and frequency of availability of them (Echegoyen, 2003).



4

PROPOSALS FOR CHILD LABOUR RISK ESTIMATE AT THE LOCAL LEVEL

As indicated in the previous section, the Latin American and Caribbean region has a large number of information sources that make it possible to measure the magnitude of child labour at the national level, as well as its associated factors. However, this information generally does not allow a disaggregation greater than that of the first administrative division (region, province, department, etc.), therefore information at a lower level of disaggregation (municipality, town centre, canton, etc.) remains invisible and, consequently, the proper implementation of public policies aimed at the prevention and eradication of child labour that do not take into account the particularities of the territory is limited.

This section offers a tool with two alternative measurement methodologies that, using existing statistical information in the countries, will both allow, on the one hand, to identify the territories in which there is a greater probability of child labour and, on the other, to estimate the weight of various risk indicators in the territories, in order to define which multi-sectoral actions are most relevant to interrupt the development of child labour. Specifically, the methodologies will be presented: Child Labour Risk Identification Model, based on surveys and censuses; and the Index of Vulnerability to Child Labour, developed through administrative records.

4.1 Child Labour Risk Identification Model[19]

The Child Labour Risk Identification Model (CLRISK) is a methodology that is within the framework of small area estimates (SAE), which are designed to allow efficient estimates of the characteristics of the population in geographic domains that are not planned in the sampling design (Rao, 2003).

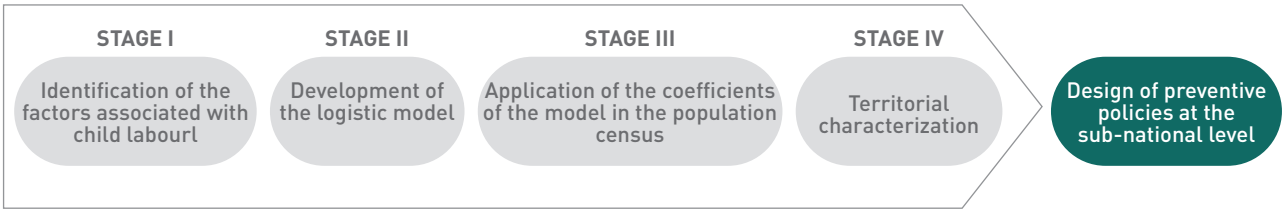
CLRISK is based on the methodology proposed by Elbers, Lanjouw, & Lanjouw (ELL) (2003), whose main objective is to make sub-national estimates, from two sources of information: one that allows estimating the phenomenon of interest, in this case child and adolescent labour; and another with the level of disaggregation and sufficient information to make the estimates at the sub-national level (example: population census)[20].

19 For greater detail on the methodology and on the Stata software programs for its implementation, see the technical report.

20 Naturally, the last source should not directly measure child labour.

Below, the four stages of generic or ideal work that the model implies are presented:

Graphic No. 2
Application Stages of the Child Labour Risk Identification Model



Source: Author´s own compilation

A. Stage I: Identification of the factors associated with child labour

The first stage begins with the identification of the variables or relevant associated factors of risk and protection of child labour that will be included in the statistical models that will be carried out in the later stages. The identification of the associated factors is carried out based on the theoretical review of previous studies, ideally from the same countries or territories where the estimate will be carried out.

As mentioned in the second section, the literature refers to different factors associated with child labour, by way of summary these can be grouped into two levels: those associated with the context and those associated with the family and individual level (See Graph No. 1).

The former are related to the geographical environment, the economic and institutional factors. Examples of these factors are the area of residence (urban/rural), the predominant economic sector in the area, the existence of policies, programs or services for the prevention and reduction of child labour, among others. The second type of factors are family and individual factors, which can be subdivided according to individual characteristics (such as sex, age, ethnic and racial origin, school attendance, immigration status, birth order, etc.); family members (types and family structures, socioeconomic characteristics of parents and/or adults and other children in the household/ family, number of people in the household, access to social protection mechanisms, etc.); and living conditions (poverty, vulnerability, housing and access to services, possession of goods, access to credit, among others).

It is worth mentioning that all the variables selected as associated factors must be capable of being measured with the available information sources. Likewise, all these factors will have to be relevant, pertinent and which in turn allow the phenomenon to be explained. However, it is very likely that there are many variables that alone explain a low proportion of the phenomenon (or that are correlated without necessarily being explanatory factors). In this case, when there is a set of variables that individually explain a low percentage of the variance, it is proposed to group them (either following statistical methods or using the natural groupings mentioned above) so that the explanation and future recommendation can be relevant to suggest multi-sectoral actions.

Once the theoretically relevant variables have been identified, it is necessary to review whether these factors can be measured through the information sources selected for the country (surveys and censuses). After selecting the databases to be used in the analysis, it will be necessary to standardize the concepts, definitions, classifications and variables that will be included in the models. That is why, both for the construction of the child labour variable and the other independent variables, it will be chosen to follow the definition and methodology of each country, especially with regard to the legal ages to work, as well as the activities considered prohibited.

B. Stage II: Development of the logistic model

Taking the survey (which makes it possible to measure child labour), the statistical models that will allow the identification of risk (and protection) indicators at the national and sub-national level will be specified. In most of the studies analysed[21], the statistical model of logistic regression[22] is used in which the probability of child labour is estimated as a dichotomous dependent variable (works or does not work), based on a set of independent variables, which should allow predicting whether a child or adolescent works or not[23].

21 For a review of the studies consulted, see Annex Nº 1.

22 Another statistical technique that allows developing similar models – with dichotomy depending variables-, is the discriminating analysis technique, even when because of the possibility of inclusion of more types of independent variables it is recommended to use the logistic regression.

23 As in every regression model, it is important to review the degree of adjustment of this one, with the purpose of detecting possible issues due to the wrong specification of variables or due to low explicative capacity.

Box No. 2

Logistic Regression

The objective of logistic regression is to predict the estimated probability that the dependent variable "Y" presents one of the two possible values (1 = yes or 0 = no) based on the different values that the set of independent variables (X_i) adopt.

$$Y_i = \begin{cases} 1 \quad if \quad I_i > 0 \quad what\ happens\ when \quad X_I\beta + \varepsilon_i > 0 \\ 0 \quad if \quad I_i < 0 \quad what\ happens\ when \quad X_I\beta + \varepsilon_i < 0 \end{cases}$$

Expressing the model in terms of probabilities, we have:

$$P_i = E(y = 1/X_i) = \frac{1}{1 + e^{-(a + \beta X_i)}}$$

Where, P_i is the probability of occurrence of an event, then (1–Pi) is the probability of non-occurrence.

$$1 - P_i = \frac{1}{1 + e^{z_i}}$$

Therefore,

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{z_i}}{1 + e^{-z_i}} = e^{z_i}$$

Then, "P_i/1-P_i" is simply the is simply the probability ratio (also called Odds or Odds Ratio) which represents the probability or estimated proportion of the occurrence of an event "P (Y = 1)" divided by the complementary property "P (Y = 0) ", that is, the number of times that something can happen over that it cannot happen. This measure admits values that go from "0" when "P (Y = 1) = 0" to "∞" when "P (Y = 1) = 1". In this way the model is laid out:

$$Odds_ratio = \frac{\frac{p_x}{1 - p_x}}{\frac{p_{x*}}{1 - p_{x*}}} = \frac{e^{-(a + \beta_x)}}{e^{-(a + \beta_{x*})}} = e^{\beta(x - x*)}$$

Taking natural logarithms of the odds (Odds Ratio), the equation of the Logit model is linearized, respecting the objective that the estimated values are within the range (0-1), obtaining the expression:

$$L_i = \ln\left(\frac{P_i}{1 - P_i}\right) = Z_i = a + \beta X_i$$

Therefore, logistic regression assumes that the logit can be expressed as a linear combination of the independent variables. Thus, the probability (p) can be expressed as:

$$logit\ (p) = \ln\left(\frac{P_i}{1 - P_i}\right) = a + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \ldots + \beta_k x_k$$

or

$$p = \frac{1}{1 + e^{-(\alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_k X_k)}}$$

Where p is the probability that the event of interest (child labour) occurs, α y β_1, β_2,...β_k are the regression parameters and $x_1, x_2, x_3,...x_k$ the explicative variables.

Depending on the representativeness of the information source used, different binary models may be developed at the sub-national level (regions, provinces, department, etc.). It should be remembered that child labour and household surveys generally have the first level of disaggregation possible at this level. Certainly, as in any econometric exercise, it is important to review the degree or closeness of fit of the logistic regression model, since, depending on the specification, that is, the variables included in the model, the final results will depend.[24]

To finalize this stage, it is necessary to save the values of the coefficients at the sub-national level from the models developed, in order to be added or pasted to the source of information used in the later stage (generally the census). This stage therefore supposes that the models developed in the surveys include only variables that can be replicated in the source used in the third stage.

24 For more information on the adjustments of the model of logistic regression, see, for example: Hosmer and Lemeshow (2000). Applied Logistic Regression, 2nd ed. New York. USA.

C. Stage III: Application of the model through population censuses

The objective of this third stage is to be able to estimate the probabilities of child and adolescent labour with lower levels of geographical disaggregation than the survey used in stage II (for example, at the municipal level). In this sense, the source of information used is precisely the one that allows greater coverage and disaggregation, for example, microdata from population censuses, educational censuses, etc.

Once the information source has been selected, the first step will be to standardize the census variables with the variables of the survey used in Stage II. The objective is that both instruments have similar variables, both in name and in the codes of their categories. The second step will be to paste the values of the coefficients (resulting from the estimation of the logistic regression) as new variables in the census. The number of new variables will be given by the number of variables used in the regression plus the constant. The third step consists of calculating the probability of each boy, girl and adolescent of being in a situation of child labour, based on the coefficients attached as the census variables. To perform this procedure, the following formula is used:

$$p_i = \frac{1}{1 + e^{-(\beta_i^r x_i^s)}}$$

Where β_i^r represents the coefficients obtained from the regression models for each one of the regions (r), r=(1,2,...,R), and x_i^s, represents the explicative variable of the model in the census.

The result of the formula will be a new variable that will include the probability of each boy, girl and adolescent of being in child labour. This individual probability can also be used as average probabilities of child labour at the local level, in order to be able to identify in which territories the problem could be concentrated. The important thing in the result of this estimate will not be the value of the incidence of child labour, but rather to determine which are the territories where there is a greater probability and which are the factors that are most influencing this probability.

Finally, a calibration or correction of the estimate will be carried out, with the aim of being able to approach the real rates of child labour. To carry out this last step, the official child labour rate that most closely approximates the analysed territory (national or regional) will be selected based on the survey used in Stage II. Having this information, first the individuals will be ordered from the lowest to the highest probability of estimated child labour and then those who are within the official rate detected (for example, 10% child labour) will be selected. With this, the "x percent" (x percentile) of the individuals who are most likely to be in child labour will be selected using a dummy variable according to the following function:

$$y_i^c = \begin{cases} 1 \text{ if } pc(p_i) \geq pc(100 - TI_R) \\ 0 \text{ if } pc(p_i) < pc(100 - TI_R) \end{cases}$$

Where TI_r represents the rate of regional child labour obtained based on the surveys and refers to the percentile of corresponding cutting point.

Once the cases have been identified based on the census information, the data is added to obtain an approximation of the number of boys, girls and adolescents in the territorial unit of analysis (municipality, commune or district).

D. Stage IV: Territorial characterization

Once the probabilities of child labour have been estimated at the local level, the characterization stage corresponds. The first step will be to review the weight of the different factors incorporated in the representative models, for which the coefficients measured will be used as probability ratios or Odds Ratio, that is, the number of times that something can happen over something that cannot happen. (See Box No. 1). This will allow not only to mention which variable or factor is most important to explain child labour, but also how this factor is expressed in the different territories. The minimum possible value is 0, the value 1 implies that the two categories compared are equal and the maximum theoretically possible is infinite. In this sense, values greater than 1 mean that the presence of the factor is associated with the greater occurrence of the event (in this case, child labour, therefore, it is considered a risk factor. On the contrary, if the result of the Odds Ratio is less than 1, the presence of the factor is associated with a lower occurrence of the event, and therefore it is considered a protection factor. For a better interpretation of the Odds Ratio, it can be transformed into probabilities, using the following formula:

$$Probability = \left(\frac{OR}{OR + 1} \right) \times 100$$

In other words, if the Odds Ratio (OR) of a factor (for example: repeated school absenteeism) is 0.33, it would mean that the occurrence of the event (for example: child labour) is 0.33 times more likely in the presence of said factor. This translated into probabilities (using the formula), can be interpreted as that there is a 25% probability of child labour in the presence of repeated school absenteeism.

The second step, after analysing the weight of the different factors that affect the probability of child labour, is the revision of this probability at the territorial level. Here, it is recommended to group the municipalities of each state or region into risk groups for child and adolescent labour, with the aim of making the information analysis easier. The selection of municipalities by state or region follows the objective of not distorting the estimates with the extreme values of the other entities. Next, an alternative for creating three groups (high, medium and low) is presented, using in each of them the same distance of the size of the risk range.

$$Tam\ Interval = \frac{Max\ \{Risk\}_j - Min\ \{Risk\}_j}{N_{municipalities}}$$

Where the sub-index j represents a specific region; Max{Risk} Highest average probability of the municipalities of the region j; Min{Risk} Lowest average probability of the municipalities of the region j

Finally, it is suggested to use and cross different information sources to characterize the territories. Indeed, this possibility is one of the greatest virtues of this methodology and the one that would allow the development of territorial and multi-sectoral policies. In this sense, the variables of the census or survey used to characterize the individuals and territories can be used, and/or also use information from administrative records or other data with the desired sub-national level. An example could be using information, at the municipal level, on school dropouts, school absenteeism, school offerings, and social programs, among others.

E. Validation of the CLRISK[25] methodology

One of the most important and crucial steps when developing an estimation methodology is to be able to contrast the results of said prediction with observed values and with this, to be able to validate the methodology. To do this, it is necessary, first, to have a survey that allows measuring child labour and, second, to have a method of comparing these results, such as a population census that allows measuring child labour.

The CLRISK methodology was implemented and validated using statistical information available from Brazil. The choice of this country is justified by the fact that its population census is one of the few instruments in the region that allows direct measurement of child and adolescent labour (10 to 17 years old) at the sub-national level, which made it possible to contrast and validate the indirect estimate proposed in this report.

In order to make the analysis easier, three groups of child labour risk[26] were created (low, medium and high), and then the groups of both methodologies were compared. Those municipalities that are in the same risk group in both methodologies are considered as correctly classified. On the other hand, those municipalities that differ in their membership groups are considered as incorrectly classified, distinguishing here those that differ in a neighbouring group and those that are in an opposite group.

Chart No. 11
Comparison of the classification of the municipalities with regard to the differences between the official measurement and the ILO-ECLAC estimate

States	Correctly classified		Incorrectly classified				Total
			In neighbouring groups		In opposite groups		
	No. of municipalities	%	No. of municipalities	%	No. of municipalities	%	No.
Acre	18	81.8	2	9.1	2	9.1	22
Alagoas	80	78.4	20	19.6	2	2.0	102
Amazonas	34	54.8	23	37.1	5	8.1	62
Amapá	12	75.0	3	18.8	1	6.3	16

25 For greater detail of the validation, see the technical report of the methodology.
26 For the elaboration of the risk groups, see the methodological detail.

States	Correctly classified		Incorrectly classified				Total
			In neighbouring groups		In opposite groups		
	No. of municipalities	%	No. of municipalities	%	No. of municipalities	%	No.
Bahía	292	70.0	120	28.8	5	1.2	417
Ceará	116	63.0	64	34.8	4	2.2	184
Espírito Santo	56	71.8	18	23.1	4	5.1	78
Goiás	147	59.8	79	32.1	20	8.1	246
Maranhão	129	59.5	71	32.7	17	7.8	217
Minas Gerais	487	57.1	310	36.3	56	6.6	853
Mato Grosso do Sul	54	69.2	20	25.6	4	5.1	78
Mato Grosso	79	56.0	56	39.7	6	4.3	141
Pará	103	72.0	39	27.3	1	0.7	143
Paraíba	137	61.4	76	34.1	10	4.5	223
Pernambuco	136	73.5	47	25.4	2	1.1	185
Piauí	112	50.2	91	40.8	20	9.0	223
Paraná	244	61.2	146	36.6	9	2.3	399
Rio de Janeiro	79	85.9	12	13.0	1	1.1	92
Rio Grande do Norte	117	70.1	41	24.6	9	5.4	167
Rondônia	39	75.0	13	25.0	0	0.0	52
Roraima	5	33.3	8	53.3	2	13.3	15

States	Correctly classified		Incorrectly classified				Total
			In neighbouring groups		In opposite groups		
	No. of municipalities	%	No. of municipalities	%	No. of municipalities	%	No.
Rio Grande do Sul	333	67.1	156	31.5	7	1.4	496
Santa Catarina	166	56.7	118	40.3	9	3.1	293
Sergipe	48	64.0	26	34.7	1	1.3	75
São Paulo	435	67.4	191	29.6	19	3.0	645
Tocantins	67	48.2	66	47.5	6	4.3	139
Total	**3,525**	**64.7**	**1,816**	**30.8**	**222**	**4.5**	**5,563**

Source: ECLAC, based on the special processing of the PNAD 2011 Survey and the 2010 Census of Brazil

The results showed that, in the case of Brazil, the estimation methodology allowed the correct classification of 65% of the municipalities (around 3,500), that is, they were classified at the same risk level (high, medium, low) both in direct measurement (through the census) and in indirect estimation (ILO-ECLAC methodology). Of the incorrectly classified municipalities, it is important to note that only 4.5% were classified in opposite groups in both methodologies, which shows a good predictive power of the proposed model.

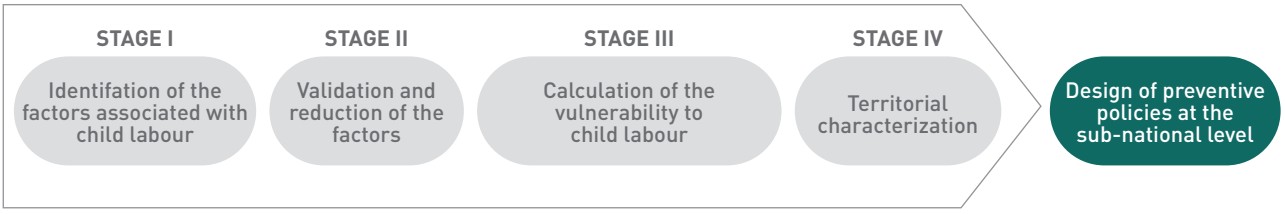
4.2 Child Labour Vulnerability Model (IVTI)

The Child Labour Vulnerability Model (IVTI) emerges as an alternative methodology for those countries that do not have the information required to apply the previous methodology (CLRISK). Specifically, the review of the information sources in the region reveals that some countries did not have updated surveys and/or censuses, as well as in others, even when they did have such information, the estimates were not statistically reliable. In response to the demand received from some interested countries, this alternative proposal was prepared on the basis of official information collected by different public entities, known as administrative records.

Specifically, the proposed methodology is analogous to that used in the human development indices carried out by the UNDP[27], where it is sought to synthesize in an index, a set of variables from these records, with the aim of identifying territories that are more vulnerable to having child labour. In this sense, it would allow countries to use available statistical information in a new way, without having to apply new and expensive measurement instruments for these purposes.

Next, the 4 main stages of the proposed generic methodology are presented, which consist first in identifying the relevant variables existing in the country, then, taking into account the large number of variables that can be measured, they are selected with statistical methods, those that allow a better explanation of the phenomenon to, in a third stage, calculate the Index of Vulnerability to Child Labour. In the last stage, the territories are characterized in order to be able to design preventive policies at the sub-national level.

Diagram No. 1
Methodology for the Estimate of Child Labour Vulnerability



Source: Author's own compilation.

27 The Human Development Index (HDI), developed by the UNDP, measures the progress of the countries summarizing in an index, 3 dimensions of social well-being (education, health and income).

A. Stage I: Factors associated with child labour

Like the methodology described in the previous section (CLRISK), the first stage begins with the identification of variables or relevant risk and protection factors (response capacity) to child labour, which will need to be included in the statistical models that they will be carried out in the later stages.

The identification of the associated factors is carried out based on the theoretical review of previous studies and the availability of existing data in the countries. In effect, the main source of information will be administrative records, which are collected by different levels of government, but do not focus precisely on child labour, but rather on proxy variables that would allow characterizing its existence. Thus, and unlike the previous methodology, here it will not be possible to know the determinants of child labour through statistical methods, so the previous studies will have to be able to identify them in order to know which proxy variables are the best explain or characterize child labour in the country to be studied.

B. Stage II: Validation and reduction of factors

Given the large number of variables that can be worked on, it will be necessary to use a statistical technique called Principal Component Analysis (PCA), which allows homogenizing and reducing the number of variables in order to facilitate the interpretation of the information. At this stage it is proposed to use the PCA technique to identify only the variables that can be associated and allow explaining child labour. It is important to mention that, although the estimation methodology will be the same in all countries, the data included in the analysis will be different, which is why this technique will allow us to validate the dimensions and factors that are theoretically significant.

Box No. 3
Standardization of the variables

Due to the different information sources, the variables are heterogeneous, which is why a standardization will be necessary, with the purpose of eliminating the effect of scale among the variables. This is achieved subtracting from each observation the arithmetical average, and dividing it by its standard deviation.

$$Z_{ij} = \frac{I_{ij} - \hat{I}_j}{SD_j}$$

Where,

Z_{ij} : Standardized variable j (j=1,..., p), for the entity i (i=1,..., 45)
I_{ij} : Variable j of the entity i
$\hat{I}_j$: The arithmetical average of the variable values j
SD_j : Standard deviation of the variable j

The new standardized variables comply by having a median equal to 0, as well as a variance equal to the unit. This, in addition, allows saying that all the variables are found in one unique scale.

Mathematically, the PCA technique allows obtaining, through the standardized variables Z_1, Z_2, Z_3,..., Z_P, a set of new variables Y_K (K=1, 2, 3,..., m y m ≤ P), which are linear combinations of the first ones. This through the calculation of a correlation matrix, which allows knowing the relationship that exists between the standardized variables (Z) and this new set of variables (Y).

$$Y_1 = a_{11} Z_1 + a_{12} Z_2 + ... + a_{1p} Z_p$$
$$Y_2 = a_{21} Z_1 + a_{22} Z_2 + ... + a_{2p} Z_p$$
$$...$$
$$Y_m = a_{m1} Z_1 + a_{m2} Z_2 + ... + a_{mp} Z_p$$

In matrix terms this is summarized as $Y = AZ$, and each row includes the variables of the territory (municipality, canton, etc.) observed and serves to refer to specific cases. This matrix (mxp) represents the new set of variables also known as Principal Components. Z is the matrix of standardized variables and A is the matrix of coefficients.

The main components must fulfil certain conditions: i) these must not be correlated, is $cov(Y_l, Y_k) = 0$, for $l \neq k$; ii) its order allows that Y_l has a greater variance than Y_m, in such a way that $var(Y_l) \geq var(Y_2) \geq var(Y_3) \geq ... var(Y_m)$ and iii) coefficients are selected in such a way that a_k is normalized, that is $1 = \sum_{i=1}^{p} a_{ik}^2 = a'_k a_k$

Determining the Main Components is the result of each one of the equations of the system presented above. Here, the objective is to find the eigenvalues and their associated vectors, employing:

$$Va_k - \lambda_k a_k = (V - \lambda_k I)\, a_k$$

In the equation presented, V is the matrix of co-variances of the standardized (Z_{ij}); I is the identity matrix and λ_k is one of the values associated with the matrix V. Finally, a_k is the eigenvalue associated with λ_k, which can be ordered in such a way that $\lambda_1 \geq \lambda_2 \geq \ldots \lambda_p \geq 0$. Likewise, to determine the eigenvectors (a_k) these must comply with the following conditions of orthonormality:

$a'_k a_r = \sum^{p}_{i=1} a_{ik} a_{ir} = 1$, if it is true that $k = r$

$a'_k a_r = \sum^{p}_{i=1} a_{ik} a_{ir} = 0$, if it is true that $k \neq r$, for every K, r =1, 2, 3,..., p

In this sense, resolving the equation systems laid out, and taking into account the restrictions imposed, we obtain the values Y_m, the main characteristics of which are i) that the median of the main components be equal to 0, that is that $E(Y_m) = 0$; ii) that the variance of these are their eigenvalues $var(Y_m) = \lambda_k$, iii) that these are uncorrelated or $cov(Y_k, Y_r) = 0$ for every $k \neq r$ and iv) that their variance maintains an order, such as is shown $var(Y_1) \geq var(Y_2) \geq var(Y_3) \geq \ldots var(Y_m)$, and that the total variance be equal to $Traza\ (V) = \sum^{p}_{m=1} var(Y_m) = \sum^{p}_{k=1} \lambda_k = p$.

What is obtained is a group of variables, called main components Y_m that group the Z_p, according to their nature, and will allow to develop a clearer diagnosis and management of the situation of child labour in each sub-national entity.

In summary, the technique employed will allow us to reduce the number of variables susceptible to work with and, on the other hand, to group said variables into a series of dimensions (educational, of social protection, labour, etc.). This will allow us, in the next stage, to develop sub-indices by dimensions based on their contained variables.

C. Stage III: Child Labour Vulnerability Index

As mentioned above, the result of the previous stage will be a series of dimensions (educational, of social protection, labour, etc.) with their respective variables to be analysed. Specifically, at this stage, the aim is to synthesize the variables of each dimension into sub-indices, and then, with these (sub-indices), calculate the Child Labour Vulnerability Index. The logic behind this index is analogous to that used in the human development indices carried out by the UNDP[28], where they measure the progress of the countries as the result of the synthesis of 3 dimensions of social welfare (education, health and income).

28 For further information, see: UNDP, 2014 and UNDP 2015.

Then, to calculate the Child Labour Vulnerability Index it will be necessary to create sub-indices for each of the dimensions, for which, minimum and maximum values of each sub-national entity (reference values) of the dimension are selected, with which we compare the achievement of the entities in these dimensions.

It is important to note that in general for the "risk" variables, high values will be considered as more vulnerable (example, percentage of labour informality). On the other hand, for the variables of "responsiveness", high values will be considered protective (for example, percentage of school attendance). If this logic occurs, for the protection variables it will be necessary to carry out a mathematical procedure in order to maintain the sense of scale (higher values correspond to greater vulnerability). In this sense, these variables will consider the complement or inverse of the result arising from the application of the generic formula (100–Index).

Taking this into account, the performance in each dimension is expressed as a value between 0 and 1 after applying the following general formula:

$$Sub\text{–}index\ of\ the\ dimension = \frac{real\ value - minimum\ value}{maximum\ value - minimum\ value}$$

Thus, the Child Labour Vulnerability Index is calculated through the geometric median[29] of the different dimensions, or sub-indices, extracted from the analysis of the main components.

$$Child\ Labour\ Vulnerability\ Index = \sqrt[n]{Di * Dii * Diii * \ldots}$$

Where,

n= total number of dimensions
d= dimension
I= number of the dimension

The final result of this stage will be a score, by sub-national entity (municipality, canton, etc.) on a scale from 0 to 100, where the minimum value will mean low vulnerability to child labour and a value close to the maximum will mean high vulnerability. It is important to specify that this score, for the purpose of facilitating interpretation, can be grouped into ranges/groups of vulnerability (low, medium, high).

29 The geometric median is usually used to calculate percentage medians and indices, especially due to the fact that it is not so sensitive to the extreme values of the distribution (as is the arithmetic median).

D. Stage IV: Territorial characterization

Once the Child Labour Vulnerability Index has been estimated, the stage of characterization of the sub-national territories corresponds. The first step in this stage will be to review the scores obtained in each of the sub-indices, with the aim of knowing which dimension of the vulnerability index lags the most and which is the most advantageous, and thus, to be able to determine on which of them public policy should focus.

In addition, it is suggested to use and cross different information sources to characterize these territories. Indeed, this possibility is one of the greatest virtues of this methodology and the one that would allow the development of territorial and multi*sectoral policies. In this sense, the set of variables from administrative records collected in stage number one can be used, even when they are not the ones selected in the index. An example could be using information, at the municipal level, on school dropouts, school absenteeism, school offerings, and social programs, among others.

5
CONCLUSIONS

The countries of Latin America and the Caribbean have made important and concrete efforts to become the first developing region free of child labour. Despite the significant reduction in incidence in recent years, the pace of progress and the indicators achieved generate concern regarding the possibility of complying with national and international commitments, among which the 2030 Agenda for Sustainable Development stands out, which seeks to eliminate all forms of child labour by 2025 (Target 8.7).

To achieve this ambitious goal, actions are required on several fronts, including reducing poverty, improving access, relevance and quality of education, generating decent work opportunities for adult family members (men, women and young people of working age), the strengthening of social protection policies, as well as new strategies to identify and intervene in a timely manner with boys and girls who are on their way towards child labour and prevent their early entry into the labour market.

Within these actions, the ILO Regional Office for Latin America and the Caribbean, together with the Economic Commission for Latin America and the Caribbean (ECLAC), developed a tool with two methodologies that will allow countries to classify territories according to level probability and vulnerability to child labour and identify the main factors associated with this risk using available statistical information (surveys, censuses and administrative records). This will enable countries, both at the national and sub-national levels, to have reliable information to design targeted and articulated multi-sectoral responses of a preventive nature to interrupt the trajectory of child labour.

The Child Labour Risk Identification Model (CLRISK) and the Child Labour Vulnerability Index (IVTI), which the ILO and ECLAC make available to countries and social partners, allow the available statistical data to be used in a new way, making visible the sub-national territories that lacked information for decision-making. This is a point of central relevance for the countries, since they can have estimates at a lower level of geographical disaggregation, without having to apply new and expensive measurement instruments for these purposes.

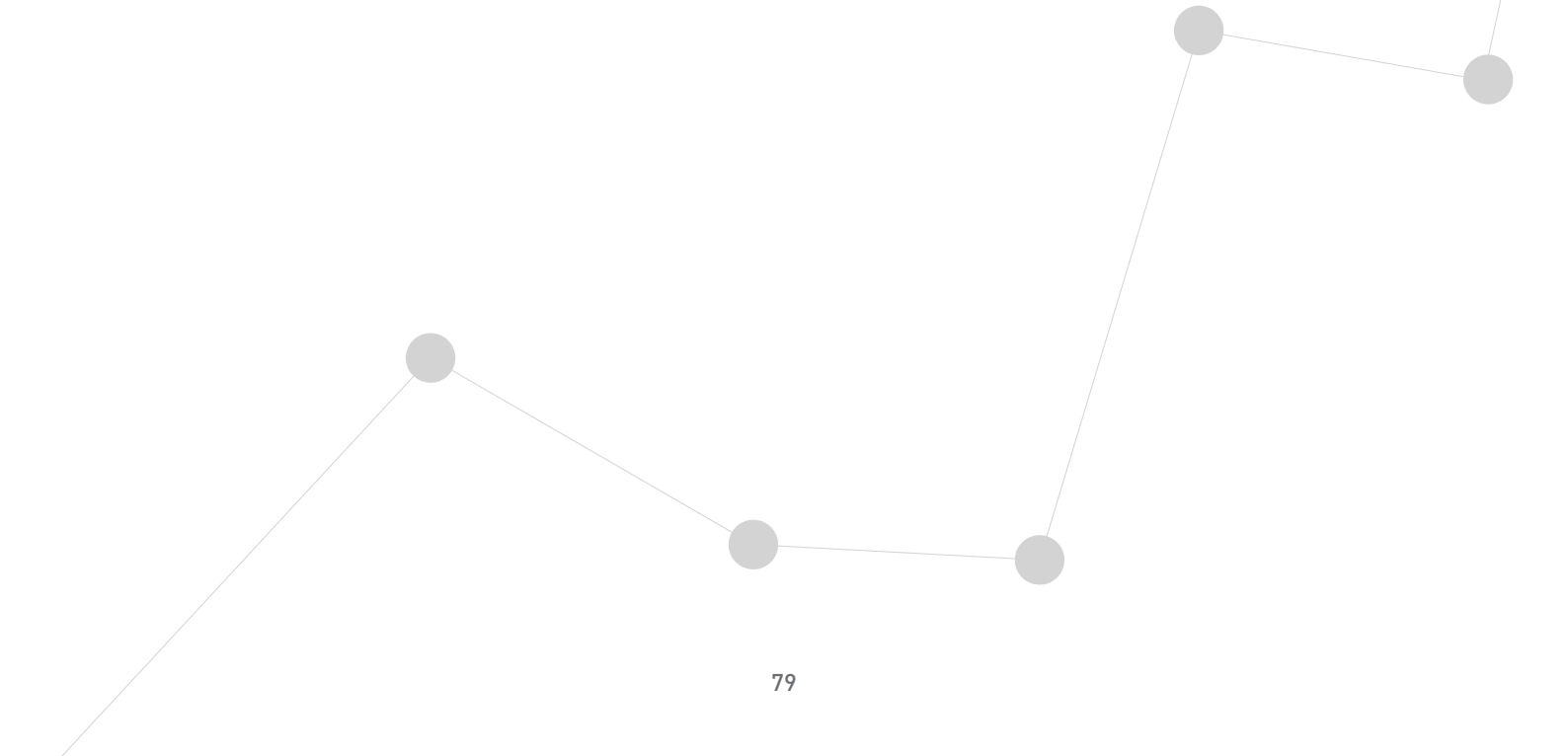
On the other hand, by being able to identify the factors associated with the risk of child labour, the model allows defining which multi-sectoral actions are most relevant in the territories to interrupt the development of child labour and plan a preventive action with an impact. In this sense, the proposal submitted is sensitive to the territories and allows a relevance of the intervention strategies.

Regarding measurement, each methodology is standardized and allows adaptation to the availability of data and the particular situation facing the region and the specific situation of each country and

its territories. Likewise, the relative simplicity of the tool allows the technical teams of the countries themselves to appropriate it and integrate it into the usual statistical processes for decision-making, thus making it possible to have timely information with a cost-efficient application.

Despite the important progress represented by having these methodologies for measuring vulnerability to child labour at the territorial level, there are some limitations of the methodologies that must be taken into account. First, countries need up-to-date information from surveys, censuses, and administrative records to build the models. Second, if one chooses to use CLRISK, it is necessary to know the representativeness of the survey, since the sub-national estimates will be more reliable as the territories reached by it increase. In addition, and related to the previous one, it is important to consider the error in the estimates, produced both by sampling errors and by the adjustment of the regression model. On the other hand, if you choose to work with the Vulnerability Index (IVTI), you must know the purposes for which the administrative records used were produced and know, through the institutions that generate them, possible biases or errors in their measurement , since the final results will depend on them. Therefore, knowing these limitations, the estimates of child labour in the territories should be taken as a reference, which helps public policy, but never as official figures in sub-national territories.

Notwithstanding these limitations, it is considered that the Child Labour Risk Identification Model and the Child Labour Vulnerability Index are pertinent, timely and cost-efficient measurement strategies that can be of valuable use to countries in the process of eradicating sustained child and adolescent labour, prioritizing the design and implementation of preventive strategies that prevent the early entry of children and adolescents into the labour market.



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ANNEX

Annex No. 1:
Studies on the factors associated with child labour

The literature review reveals different statistical methods to approach the study of the factors associated with child labour. In general, most studies calculate the probability that a child performs child labour or not, based on a set of independent variables. This set of variables that have a significant influence are considered determinants or factors associated with child labour.

The main studies analysed show two main statistical models, which are similar to each other, since both are probability models. These models are the logistic regression models (binomial or multinomial) and the probit models (binomial and in two stages). In very simple terms, the difference between the two models lies in how the dependent variables are statistically distributed. The first has a cumulative Logit distribution, instead of a normal distribution like that of Probit models.

Main studies and type of model used

Authors	Title	Place	Type of model
Bernal and Cárdenas (2006)	Trabajo infantil en Colombia	Colombia	Reg. Logistic Binomial
Bonilla, W. (2010)	Determinantes del trabajo infantil y adolescente en Nicaragua	Nicaragua	Reg. Logistic Binomial
Canagarajah and Coulombe (1997)	Child labor and schooling in Ghana	Ghana	Probit Binomial
Cortez, R. and Gil, A. (2000)	Factores determinantes del trabajo infantil en Perú	Peru	Model probit in two stages

Authors	Title	Place	Type of model
Del Río, M.F. and Cumsille, P. (2008)	¿Necesidad económica o preferencias culturales? La justificación parental del trabajo infantil en Chile	Chile	Reg. Logistic
Gunnarsson, Orazem and Sánchez (2004)	Child labour and school achievement in Latin America	Latin America	Model probit
Heady (2000)	What is the effect of child labour on learning achievement? Evidence from Ghana	Ghana	Probit Binomial
INE, Uruguay (2010)	Magnitud y características del trabajo infantil en Uruguay	Uruguay	Reg. Logistic Binomial
INEC, Ecuador (2015)	Trabajo infantil en Ecuador: Hacia un entendimiento integral de la problemática	Ecuador	Reg. Logistic Multinomial
Muñoz, V. (2014)	Determinantes de la oferta de trabajo infantil en los hogares de Cali: Evidencia desde modelos de elección discreta 2012	Colombia	Reg. Logistic
Patrinos and Psacharopoulos (1995)	Educational performance and child labour in Paraguay	Paraguay	Multi-varied analysis
Patrinos and Psacharopoulos (1997)	Family size, schooling and child labour in Peru – An empirical analysis	Peru	Reg. Logistic
Psacharopoulos (1997)	Child labour versus educational attainment: Some evidence from Latin America	Bolivia and Venezuela	Reg. Logistic
Pedraza and Ribero (2006)	El trabajo infantil y juvenil en Colombia y algunas de sus consecuencias clave	Colombia	Logit Multinomial, Probit Binomial, Probit Orderly
Ravallion and Wondo (2000)	Does child labour displace schooling? Evidence on behavioral responses to an enrollment subsidy	Bangladesh	Probit Binomial
Ray (2000a)	Poverty, household size and child welfare in India	India	Reg. Logistic

Authors	Title	Place	Type of model
Ray (2000b)	Analysis of child labour in Peru and Pakistan: A comparative study	Peru and Pakistan	Method in two stages, SLS
Ray and Lancaster (2004)	The impact of children's work on schooling: Multi-country evidence based on SIMPOC data	Cambodia and Namibia	Logit Multinomial, MCO instrumental variables
ILO/ UNICEF / World Bank (2013 and 2014)	Entendiendo el trabajo infantil y el empleo juvenil	El Salvador and the Dominican Republic	Biprobit
Urueña, et. Al. (2009)	Determinantes del trabajo infantil y la escolaridad: El caso del Valle del Cauca en Colombia	Colombia	Probit Binomial
Villazhañay, J. and Narváez, G. (2014)	Características y determinantes del trabajo infantil y su influencia en la deserción escolar en el Ecuador, 2012	Ecuador	Probit Binomial

Source: Author´s own compilation by May 2018

In most of the studies reviewed, the models used work on the dependent variable as dichotomous (binomial logit and binomial probit), in which they estimate the probability of work (works or does not work) based on a set of independent variables. On the other hand, in the studies that use multinomial models, the dependent variable assumes more than two values. For example, a dependent variable with three categories of responses: i) Child only works; ii) Works and studies; iii) Only studies.

For further information, please visit:

Regional Initiative Latin America and the Caribbean Free of Child Labour
www.iniciativa2025alc.org
iniciativaregional@ilo.org

International Labour Organization (ILO)
www.ilo.org/childlabour
sirti_oit@ilo.org

Economic Commission for Latin America and the Caribbean (ECLAC) – Social Development Division
https://www.cepal.org/en/work-areas/social-development

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