



## Stichting Pelicano

*Ons hart voor kansarme kinderen*



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***This paper is dedicated to all kids in poverty in Belgium.***

## Executive summary

One child out of three lives in poverty worldwide. This frightening statistic indicates that childhood poverty remains a global issue. It occurs in every country, and the consequences of the current Covid-19 outbreak will probably contribute to this problem. Belgium has a robust economy and a decent social system. However, the country performs poorly in terms of poverty. In 2018, approximately 531.000 children in Belgium (less than 18 years old) were at risk of poverty and social exclusion (AROPE) which accounted for 23% of the children in the same age group. Additionally, despite all efforts from consecutive federal, regional, or local governments and the help of many non-profit organizations, the AROPE rate has not significantly dropped in the last 10 years in Belgium. In fact, this rate has even increased by 1,4 percentage points (pp) between 2016 and 2018. At a regional level, 38% of Belgian residents in Brussels are at risk of poverty or social exclusion. This percentage is the highest compared to other EU countries while Flanders has the lowest percentage (12,9%) in Belgium and Wallonia is in between, with an AROPE rate of 26,2%.

Those alarming figures bear severe consequences. Poverty causes not only material and physical harm to individuals but also great sufferings for the whole society. Over the years, successive governments have spent significant amounts on social security (€ 95 478 million in 2017). However, a detailed budget allocated to fight infant poverty (or general poverty) in Belgium is not expressed in the national court of audit. Even though, detailed estimates are not publicly disclosed, this study has discovered that poverty costs governments every year millions in lost productivity, health expenditures, crime cost, etc. However, poverty is not a fatality, and it can certainly be addressed with proper public policies and with the help of NGO's or foundations.

Pelicano, a Belgian foundation of public utility, has developed over the years a robust social program to fight infant poverty in Belgium. The foundation supports children during their whole childhood and early adulthood until they join the labour market. This long-term and holistic approach differentiates Pelicano from all other organisms in Belgium. The foundation works closely with different partners (e.g., schools, OCMWs/CPAs) to monitor and help the situations of poor children in Belgium until they become fully active and independent individuals. This long-term approach is unique and includes all material, social, financial, psychological and even emotional support needed for the good development of the children.

This noble social cause on its own might seem salutary. Nevertheless, an important question for Pelicano foundation remains: what is the total economic and social impact of Pelicano's social program in Belgium?

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<sup>1</sup> Belgium court of audit (Cours des comptes de Belgique / rekenhof): Synthesis of the 2018 book related to social security. Retrieved from : <https://www.ccrek.be/FR/Publications/Fiche.html?id=8304bf8d-64f1-401e-b71c-8f573b2e72c9>

<sup>2</sup> "court des comptes" in French or "rekenhof" in Dutch

In this context, the purpose of this business case is to determine the total social and economic impact of Pelicano's foundation on society as a whole but also on each important stakeholder such as the government, Pelicano itself and the children. To do so, a cost-benefit analysis (CBA) has been conducted following the academic literature on the cost-benefit analysis of early childhood interventions and social project investments of D'addio et al (2005) and Karoly (2010). Hence, the approach followed in this research consists of addressing three empirical questions. Firstly, we determined an overall estimate of the possible tangible costs associated with poverty in Belgium. Secondly, we determined the total economic impact of Pelicano's social program with one single child over his whole active life (until retirement). Thirdly, we calculated the total impact of Pelicano social program over the next 15 years considering the in- and outflow of children joining the program with the goal to reach 2000 children by 2025 (1744 children are currently enrolled in the social program).

Our study reports several interesting results. First, we found that at a macro-level, the government could potentially save up to € 13.439,49 a year by lifting one person out of poverty in Belgium. This estimate has been determined based on five major costs associated with infant poverty: the opportunity cost in VAT contribution, in social security contribution and in income taxes; the cost of health associated with poverty; the cost of crime ; the intergenerational cost and unemployment allowances as shown below :

Opportunity cost	€ 11,270.84
Cost of health	€ 892.89
Cost of crime	€ 51.51
Unemployment allowances	€ 291.85
Intergenerational cost	€ 932.40

Those macro-level estimates should be interpreted cautiously and put into perspective. The moment at which those costs occur differs through time and the 1744 children currently enrolled at Pelicano do not all have the same age. For example, the intergenerational cost will occur only later during adulthood while health costs could also happen during childhood. Hence, the total amount of potential cost savings is different each year and neglecting as such the time value of money could significantly change the total estimate of € 13.439,49 thought time (especially when a cost appears later in life).

Therefore, to overcome those challenges, we conducted a cost-benefit analysis based on those single cost estimates and expected future benefits. We discovered that **the total impact of Pelicano to lift one single child out of poverty reaches € 538.013**. This means that Pelicano creates € 538.013 of added value to our society by lifting one single child out of poverty. Moreover, we found that Pelicano has a positive impact on the government of € 319.266 for every single child joining the social program.

When we took a close look at Pelicano's social program we determined that the **total costs for Pelicano to finance one single child** until he/she becomes fully independent and start working is on average **€ 43.471**

Finally, we scaled up this previous analysis to determine the total impact Pelicano has on society by taking into account the in- and outflow of children in the social program over the next 15 years with the goal to reach 2000 children by 2025 (1744 children are currently enrolled in the social program). We found evidence that **Pelicano could create € 26.827.898 over the next 15 years of added value to our society**. Additionally, we observed a **positive impact on the government in costs savings of € 64.422.977 over the next 15 years**.

To conclude, investing in the prevention of infant poverty is economically sound and much more desired in the long term than dealing with its consequences. Poverty is a complex multidimensional issue which affects all of us as a society. Therefore, we should all participate in its elimination. Shall we ask ourselves how to tackle this issue in the future? We understand poverty as a problem which affects many different aspects of our society and should be combatted with actions embedding different approaches.

## ***Acknowledgments***

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## Index of Abbreviations

AROP	At-Risk-Of-Poverty
AROPE	At-Risk-Of-Poverty and social Exclusion
CBA	Cost-Benefit Analysis
CPAS	Centre Public d'Action Sociale
ECEC	Early Childhood Education and Care
EPIC	European Platform for Investing in Children
EU	European Union
GDP	Gross Domestic Product
IT	Income Taxes
LWI	Low Work Intensity
NGO	Non-Governmental Organization
OCMW	Openbaar Centrum voor Maatschappelijk Welzijn
PP	Percentage Point
SDR	Social Discount Rate
SMD	Severe Material Deprivation
SOC	Social Opportunity Cost
S RTP	Social Rate of Time Preference
SS	Social Security
UN	United Nation
VAT	Value Added Tax

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## 01. Introduction

*"Overcoming poverty is not a gesture of charity. It is an act of justice. It is the protection of a fundamental human right, the right to dignity and a decent life. While poverty persists, there is no true freedom"*

*-Nelson Mandela-*

Over the last decade, alarming figures on infant poverty in Belgium have been brought to the attention of successive Belgian governments, the public and EU policymakers. Nevertheless, despite all efforts to tackle this issue, the rate of children at risk of poverty or social exclusion (AROPE) in Belgium remained almost constant. This phenomenon can be explained by multiple macro and micro factors such as the intergenerational character of poverty, the conditions on the labour market, the educational system, or the healthcare system<sup>3</sup>. In this context, poverty does not only affect those who grow up in impoverished circumstances, but also influence the whole society. Additionally, the consequences of childhood poverty are wide-ranging and long-lasting, which leads to important social costs faced each year by the government.

To combat this scourge, Pelicano, a Belgian foundation of public utility, has developed a robust social program to fight infant poverty in Belgium. The foundation supports children during their whole childhood and early adulthood until they join the labour market. Pelicano's social program has been designed to help children by different channels and give them access to the same opportunities as any other child. Hence, this social program takes a holistic approach to tackle infant poverty as they follow up each individual child and consider every possible aspect of infant poverty to ease children's integration in society and on the job market later on. Even though this social purpose might seem salutary, an important question for the foundation and public interests remains: what is the total economic and social impact of Pelicano's social program in Belgium?

In this context, the purpose of this report is to determine the impact of Pelicano's social program on the Belgian society as a whole but also on important stakeholders such as the government, Pelicano itself and the children. To do so, this paper will answer three empirical questions. First, we will determine an overall estimation of the possible costs savings the government could gain by alleviating infant poverty in Belgium. Based on those results, the second empirical research will consist of determining the total economic impact of Pelicano's social program on one child over his whole active life (until retirement). Finally, we calculated the total impact of Pelicano's program over the next 15 years, considering the total current number of children (1744) and Pelicano's goal to reach 2000 children by 2025.

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<sup>3</sup> DALY, M. (2019). Fighting child poverty – The child Guarantee. Policy Department for Economic, Scientific and Quality of Life Policies. Requested by the EMPL committee : [https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/638429/IPOL\\_BRI\(2019\)638429\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/638429/IPOL_BRI(2019)638429_EN.pdf)

The remainder of this paper is organised as follows. Section 2 reviews the current state of infant poverty in Belgium, Europe and in the world. It will provide a definition of infant poverty, the main statistics of child poverty, the main actors fighting infant poverty and finally the latest legislative initiatives in Europe and Belgium. Section 3 reviews the state of knowledge on infant poverty in the academic literature. Section 4 provides information on the empirical methodology used and the database built to answer the research question. Then, we analyse our empirical results in Section 5. Finally, section 6 offers concluding remarks, in which the scope and further recommendations for Pelicano are discussed.

## 02. Current state of infant poverty in Belgium

### 02.1 Definition

Many images come to mind when we talk about “childhood poverty”. This term can be sometimes confusing and providing a sound definition can be challenging as many variables need to be considered, which go well beyond simple material poverty. UNICEF (2005) defines child poverty as children living in an environment that is damaging their physical, mental, spiritual and emotional development. Hence, expanding the conceptualization of child poverty beyond traditional definitions, which usually includes low levels of consumption or household income, is particularly important. Nevertheless, infant poverty is seldom differentiated from general poverty and its unique dimensions are rarely recognized. This could be due to the difficulty of collecting such information at a larger scale. Nevertheless, some indicators developed by regulators and NGOs provide already a good proxy of child deprivation in Europe and the world.

The children “at risk of poverty or social exclusion” (AROPE) is a leading indicator of childhood poverty in Belgium and it is used by most regulators in the EU and international organizations such as the European Commission, Eurostat (EU-SILC) or United Nations (UN). Eurostat (2020) defines children at risk of poverty or social exclusion as the sum of children (aged between 0-17) who are either “at risk of poverty”(AROP), “severely materially deprived” (SMD) or living in (quasi-) jobless households (households with a level of work intensity below 20% or LWI) as a share of the total population in the same age group. If the household in which a child lives is characterized by a low income and/or low work intensity and/or severe material deprivation, that child is considered at risk of poverty and/or social exclusion. In this context, we can see that childhood poverty has a broad definition and needs to be fully understood to provide sound statistics in this research paper. Therefore, we will define each of the components describing children AROPE.

In this research paper, those indicators will be used to understand the current state of childhood poverty in Belgium. Nevertheless, we want to emphasize that child poverty goes well beyond material poverty and new indicators should be further developed to give a holistic representation. As argued by UNICEF (2005), children living in an environment that provide little emotional support removes many of the positive effects of growing up in a materially rich household. In this context, discriminating against their participation in society and inhibiting their potential, poverty is a measure not only of children’s suffering but also of their disempowerment.

## 02.2 Overview of child poverty in Belgium, Belgian regions and other EU countries

### 02.2.1 World and EU level

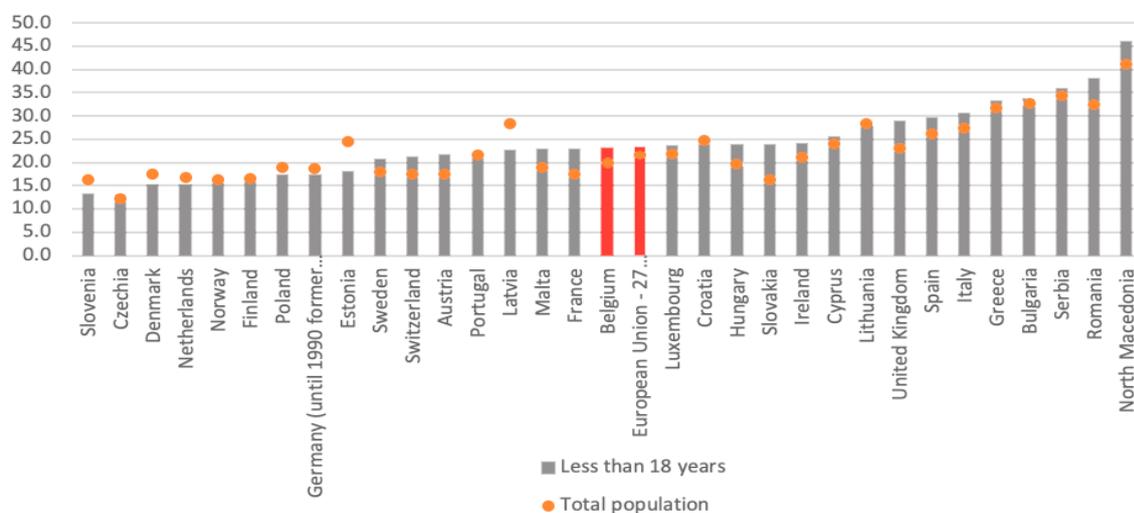
663 million children (less than 18 years old) in the world live in poverty. This alarming number estimated by UNICEF accounts for nearly a third of the total children population worldwide and among them, 385 million children live in extreme poverty with less than \$1,90 a day. This situation is unfortunately not new and most countries in the world display the same features: poverty rates are higher among children (less than 18 years old) than any other age group and children are twice as likely to fall into poverty compared to adults (UNICEF, 2020)<sup>1</sup>.

In 2018, 24,2 % of all children in the EU28 were at risk of poverty or social exclusion compared to 22,1 % of adults (18–64) and 18,4 % of the elderly (65 or over). This figure accounts for **22.687 million European children AROPE in 2018**.

Like in many other EU countries, Belgian children are the age group with the highest at-risk-of-poverty rate. In 2018, Belgium counted approximately 531.000 children (less than 18 years old) at risk of poverty and social exclusion which accounts for 23% in the same age group. This means that almost one kid out of four is at risk of poverty or social exclusion in Belgium. This percentage is very close to the EU27 average of 23,4% (see figure 1).

In Europe, the largest differences between the AROPE rates for children and the AROPE rates for the total population were found in France, Slovakia and Romania with a difference of more than 5 percentage points (pp) higher for children than for the total population. For Belgium, a difference of 3 pp can be noticed, which is more than the EU27 average of 1,8 pp. Nevertheless, the rates for children were below those of the total population, with more than 5 pp in Latvia (– 5,9 pp) and Estonia (– 6,5 pp).

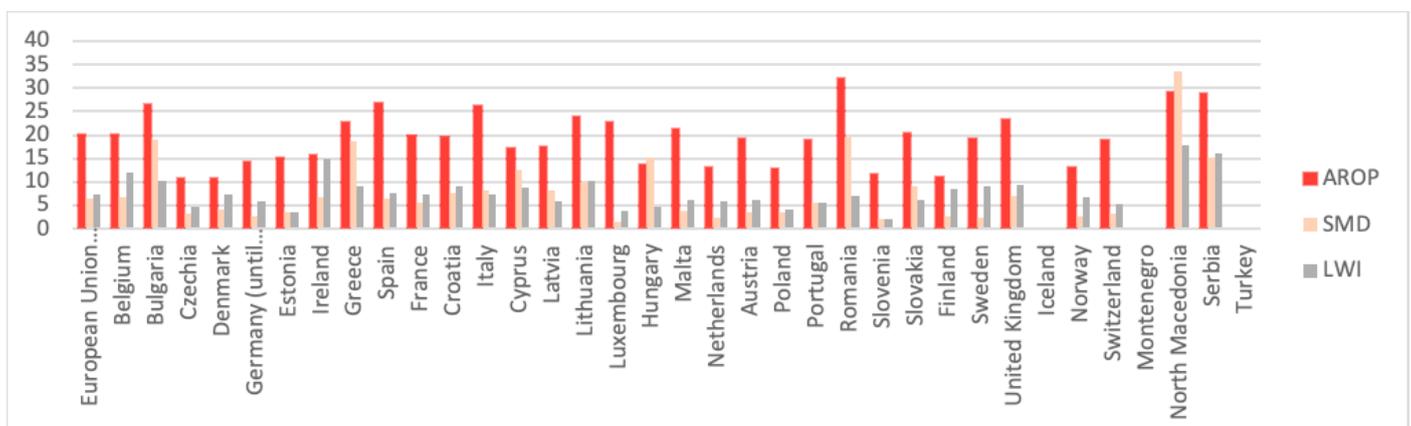
Figure 1 : Children at risk of poverty or social exclusion in Europe (2018)



Source: Own computation based on Eurostat database (online data code ilc\_peps01)

The labour market and the professional situation of parents are indicators which determine the material deprivation situation in which children grow up. In 2018, 7,4% of all children in the EU28 lived in (quasi-) jobless households, ranging from 2,2% in Slovenia to 14,8% in Ireland. The rate of children in severely materially deprived households varied from 1,5% in Luxembourg to 19,7 % in Romania against an average in the EU28 of 6,5%. Belgium has 6,9% of all its children living in severe material deprivation, 20,1% are at risk of monetary poverty and 11,9% are living in a household with low-work intensity, which is 4,5 pp higher than the EU28 average (see figure 2).

Figure 2 : Children at-risk-of-poverty rate, severe material deprivation rate and share living in (quasi-) jobless households (2018)



Source: Own computation based on Eurostat (EU-SILC) database

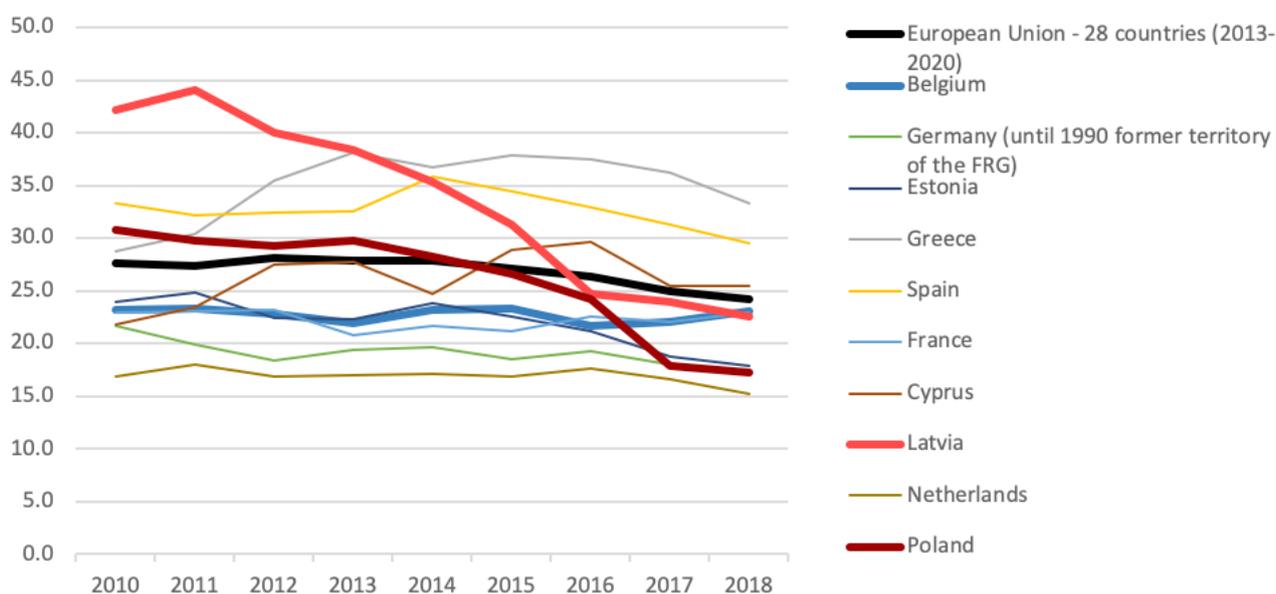
In most of the EU member states, the share of children at risk of poverty or social exclusion decreased between 2010 and 2018. The largest decreases were recorded in Latvia and Poland. As shown in figure 3, Latvia decreased from 42,2% in 2010 to 22,5% in 2018, which is below the EU28 average (24,2%). Poland has also displayed an impressive decrease in the children AROPE rate from 30,8% to 17,2% during the same time period. Notable decreases were also registered in Hungary (-14,5 pp), Bulgaria (-16,1 pp) and Lithuania (-7,8 pp).

The important decrease of children AROPE in 2016 in Poland can be explained by the government's initiative to introduce a new family benefit program: The Family 500+ program<sup>4</sup>. This social program had two main objectives: reduce child poverty and encourage fertility, which consisted of monthly payments of PLN 500 (€115) for every child after the first one until they become adults. The benefit program was also extended to the first child of all Polish families below a defined income threshold. Given the specificities of Poland' minimum wage and economic structure (amount of the benefit was almost equal to 40% of the net minimum wage), this new program had a large increase in transfers to households living in poverty in Poland. Moreover, the program was designed to supplement other family benefits and social assistance which did not influence the eligibility to other existing social programs. Nevertheless, we can observe that this approach was beneficial on the very short term as the level of children AROPE stagnated the year after.

The long-term decrease of Latvia’s children at-risk-of-poverty rate is explained by the “Latvian National Action Plan for Reduction of Poverty and Social Exclusion” introduced in 2004 to reach European goals and become a full member state of the EU. This reform tackled fundamental structural changes in the economic and social features of the country. Those include employment, education, housing, health, social services, transport, etc. Those two examples illustrate what has already been argued by Vandenbroucke et al. (2020). We can observe that a long-lasting impact on child poverty goes beyond simple direct social transfers and wider economic and social changes are required to have a long-term impact on infant poverty. It requires reforms in the education system, labour market, social integration, immigration policies, etc.

In contrast, the largest increases among EU member states between 2010 and 2018 were observed in Greece (+4,6 pp) and Cyprus (+3,7 pp), followed by Finland (+ 1,8 pp) and Sweden (+ 1.4pp). At EU level, the percentage of the total population below 18 years old who were at risk of poverty or social exclusion decreased by 3,3 pp, from 27,5% in 2010 to 24,2% in 2018. This figure is the result of common initiatives taken at the EU level to decrease children AROPE in the last few years.

Figure 3. Evolution of children at Risk of Poverty or Social Exclusion in Europe. (2010-2018)



Source: Own computation based on Eurostat (EU-SILC) database

<sup>4</sup> Retrieved from the European Commission website: <https://ec.europa.eu/social/main.jsp?langId=fr&catId=1246&newsId=9104&furtherNews=yes>

## 02.2.2 National and regional level

By taking a closer look at the total state of poverty in Belgium, 20% of all Belgians were at risk of poverty or social exclusion (AROPE). Among them, 16,4 % of the Belgians were considered at risk of monetary poverty (AROP) in 2018. Those people live in a household with a total disposable income lower than €1.139 each month for a single person. 5% of all Belgians were confronted with severe material deprivation (SMD) and 12,6% of the population lived in households with a low-work intensity (LWI) in 2018.

Despite all efforts from the federal government and other NGOs to eradicate poverty, child poverty remained constant over the last decade. Table 1 shows that the AROPE rate between 2010 and 2018 for children under 18 fluctuated around 23%. More surprisingly, we can observe that the children AROP sub-indicators have even increased by 1,7 pp between 2017 and 2018.

Moreover, the difference between the AROP rate from the total population and the children age group seems to have a significant impact on the AROPE indicator. Additionally, we could argue that previous policies and initiatives to eradicate poverty in Belgium did not have a significant impact over the years.

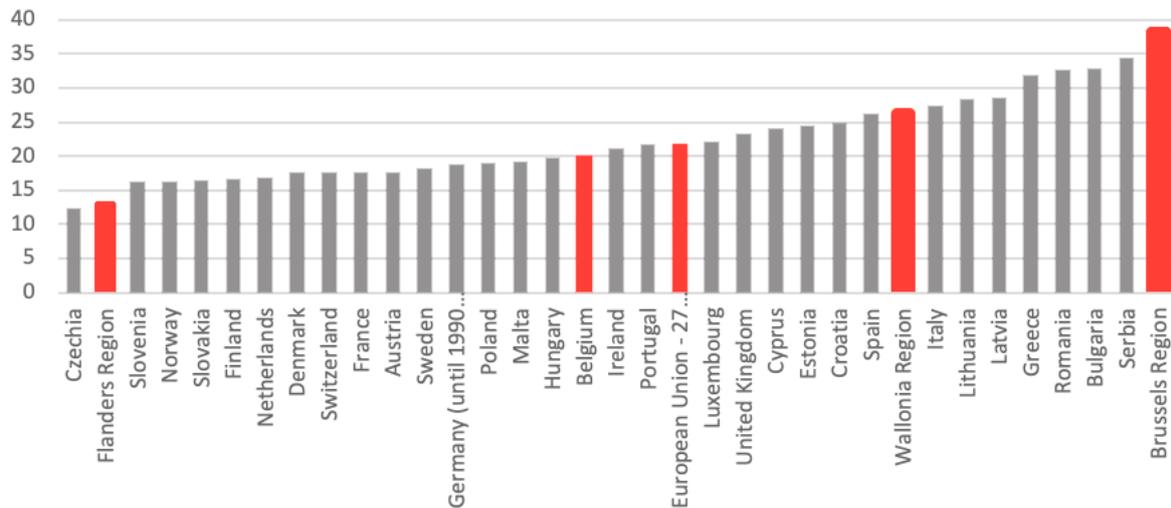
Table 1 : Comparison of the total population and children in poverty in Belgium (2010-2018)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>AROPE</b>									
Total	20.8	21.0	21.6	20.8	21.2	21.1	20.9	20.6	20.0
Less than 18	23.2	23.3	22.8	21.9	23.2	23.3	21.6	22.1	23.0
<b>AROP</b>									
Total	14.6	15.3	15.3	15.1	15.5	14.9	15.5	15.9	16.4
Less than 18	18.3	18.7	17.3	17.2	18.8	18.0	17.6	18.4	20.1
<b>SMD</b>									
Total	5.9	5.7	6.3	5.1	5.9	5.8	5.5	5.2	5.0
Less than 18	7.7	8.2	8.3	5.5	6.8	7.9	6.7	6.6	6.9
<b>LWI</b>									
Total	12.7	13.8	13.9	14.0	14.6	14.9	14.9	13.9	12.6
Less than 18	12.0	14.0	13.0	12.2	13.0	13.8	13.2	13.0	11.9

*Source: Own computation based on Eurostat (EU-SILC) database*

At a regional level, figure 4 shows that 38% of Belgian residents in Brussels are at risk of poverty or social exclusion. This percentage is the highest compared to other EU countries. Flanders has the lowest percentage (12,9%) in Belgium and Wallonia has an AROPE rate of 26,2%.

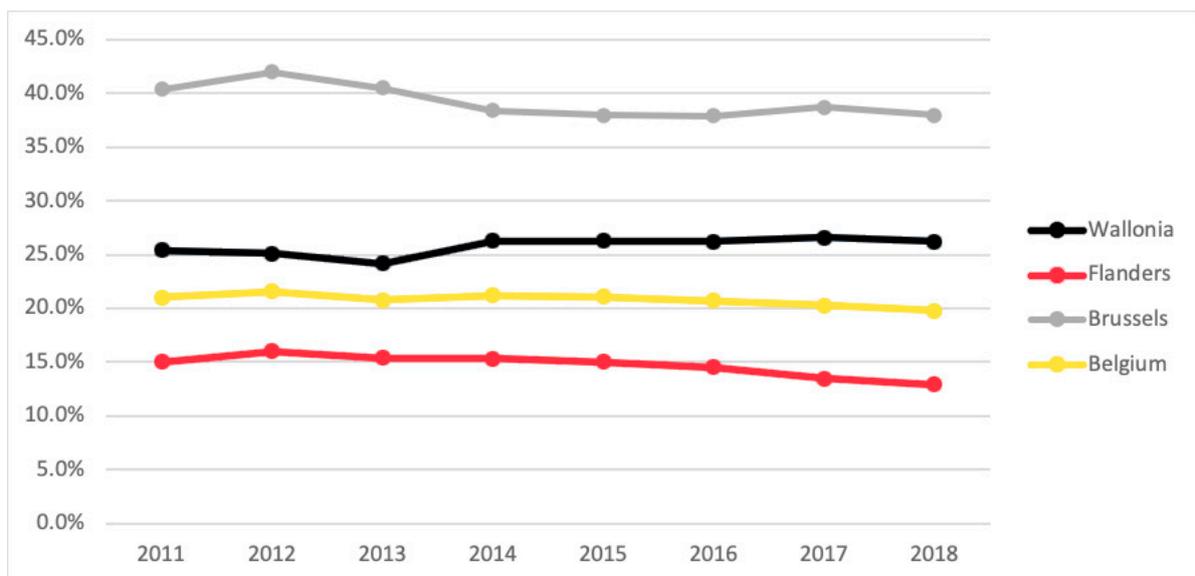
Figure 4 : People at risk of poverty or social exclusion per regions in 2018.



Source: Own computation based on Eurostat database (EU-SILC)

Over the last decade, figure 5 demonstrates a constant regional difference in poverty rates, with Brussels having the highest population AROPE. Flanders has been performing better than the other regions by decreasing its AROPE rate from 15% in 2015 to 12,9% in 2018. Nevertheless, we can see that in general no significant changes have occurred at a regional level.

Figure 5 : Population at risk of poverty or social exclusion per regions (2011-2018)



Source: Own computation based on Statbel Database<sup>5</sup>

<sup>5</sup> Retrieved from Statbel database : <https://statbel.fgov.be/en/themes/households/poverty-and-living-conditions/risk-poverty-or-social-exclusion#figures>

The evolution of the AROPE rate of the different regions in Belgium is shown in figure 5. However, the rate of monetary poverty used in AROPE and AROP are relative measures that depend on the level of income in the country. Those considered as poor are people whose income falls below 60% of the median national income. Therefore, to overcome the issue of making assumptions on the share of resources within each Belgian household, Guio and Vandenbroucke (2019) developed a novel child-specific deprivation indicator, adopted at the EU level in March 2018, to compare the levels of child deprivation in Belgium at the national and regional level.

This indicator measures the daily difficulties faced by children in Belgium, which is not based on monetary concepts, but on children's access to 17 necessary items for any European child today (see list in Appendix IV). The results of their study show that the level of child deprivation is 15% in Belgium in 2014, similar to France, but above the levels of other neighbouring countries. Nevertheless, the Belgian national average masks large differences between the regions. The rate of children deprived of at least three items from the list in Appendix IV is 8% in Flanders, 22% in Wallonia and 29% in Brussels.

Their research also defined the risk factors explaining child deprivation in Belgium and Europe. They found that child deprivation is principally associated with the composition of each household, the household resources (education, employment, debt, disposable income, etc.) and the needs of the household (healthcare costs, housing, etc.)

### **02.3 Main actors in the fight against child poverty in Belgium**

Although European states still aim at securing the fulfilment of citizenship and rights with a variety of tools and means, one of the most important challenges regarding infant poverty today is the historical fragmentation of welfare services in Belgium (Vermeiren et al., 2018).

Infant poverty is a complex multi-dimensional issue. Hence, one of the main challenges in fighting infant poverty and at the same time supporting high quality social services is the fragmentation of services (Provan & Sebastian, 1998; Allen, 2003). According to Vermeiren et al. (2018), the specifics of infant poverty with its several dimensions (health, education, etc.) mark this segregation at different levels:

**1. Sectoral segregation:** Those include services that are specialized in only one single area such as education, financial problems, parent support, housing, childcare, etc. Nevertheless, families living in poverty don't perceive those dimensions as separate needs. Even though, those specialized services can add value to fight infant poverty, it has to be acknowledged that all those needs are interlinked (Lister, 2004; Broadhead, Meleady & Delgado, 2008).

**2. Age segregation:** Adult's needs are often separated from the children's ones which can result in a differentiated service design, which then reinforces sectorial segregation.

**3. Subgroup or target group segregation:** Targeting specific groups such as single mothers, families with a child requiring special needs or families in poverty in general can result in the creation of services that address specific subgroups (Mkandawire, 2005). This approach assumes that for each demographic characteristic correspond for specific needs. However, empirical evidence suggests otherwise, and a largescale study conducted by Vandenbroeck, Bouverne-De Bie and Bradt (2010) refutes that demographic variables affect those differentiated needs.

**4. Policy segregation:** Services could be governed and directed from a state, regional or local level, making the cooperation between them a real challenge (Statham, 2011). The segregation of policy levels, such as CPAs/OCMW and other local social policy makers, contribute to the fragmentation of services and support related to infant poverty.

**5. Organizational segregation:** NGOs, foundations, faith-based organization and voluntary led services are separated from governmental services which led to the creation of a cooperation between all actors to alleviate infant poverty (OECD, 2001).

In this context, the diversity of services and organizations creates a real challenge for families. Belgium accounted for more than **122.710 NGOs in 2015 and 150.000 in 2018**, according to a recent poll from Statista<sup>6</sup>. Among them, 1751 foundations were registered at the Belgian monitor by the end of 2015, from which 573 foundations of public utility and 1178 private foundations (Xhauflair & Mernier, 2017).

Today, the Belgian monitor counts in its database 2695 foundations of public utility<sup>7</sup>, the same judiciary form as the Pelicano Foundation. Hence, we can see that in five years the number of foundations of public utility has increased by 370,33%. Additionally, 2195 private foundations were registered and listed in the database of the Belgian monitor as of June 2020<sup>8</sup>. Finally, Vermeiren et al. (2018) discovered that 225 networks of organizations fighting infant poverty were present in Belgium.

To have a first overview of the principal players active in Belgium, an exhaustive list has been established based on four criteria: the type (legal form), the geographical coverage, the approach to fight infant poverty and the social purpose of the entity (see table 2 below). The list below represents a sample which might not be representative of the whole foundation and NGOs population present in Belgium. The main reason for this bias is caused by the fact that a complete list of all NGOs fighting specifically infant poverty in Belgium does not exist and the constitution of such database goes beyond the scope of this research. Nevertheless, table 2 shows a good overview of the possible players within each criterion selected even though, it might omit many NGOs and/or foundations active in Belgium. Few lists of NGOs provided by federations of NGOs helped designed table 2 such as: the Badje, King Baudoin Foundation, or Eurochild. Other foundations and associations were found via social security websites and Google search.

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<sup>6</sup> Retrieved from Statista website and database : <https://www.statista.com/statistics/886813/number-of-ngos-in-belgium-by-region/>

<sup>7</sup> Retrieved from the belgian monitor database : <http://www.ejustice.just.fgov.be/tsv/tsvf.htm>

<sup>8</sup> Retrieved from the belgian monitor database : <http://www.ejustice.just.fgov.be/tsv/tsvf.htm>

Table 2 : Sample of Belgian NGOs fighting infant poverty in Belgium

Name	Type	Covering	Approach	Purpose
Pelicano Foundation	Foundation	National	Holistic	Eliminate infant poverty
Eurochild	Network of organisation	European	Focused	Activities of sensibilisation and information
Roi Baudoin foundation	Foundation	National	Focused	Activities of sensibilisation and information
NASCI	Non-profit	Brussels	Focused	Concrete material first-line support for specific period
L'ACCEUIL	Non-profit	Wallonia-Brussels	Focused	Urgent first help for children in distressed
Assistance à l'enfance	Non-profit	Wallonia	Focused	Activities to help children in needs
Fondation45	Private foundation	National	Focused	Finance initiatives to tackle infant poverty
Amarrage	Non-profit	Wallonia-Brussels	Focused	Emergency shelters for children from 3 to 18
Fonds Houtman	Non-profit	Wallonia-Brussels	Focused	Finance initiatives to tackle infant poverty
kinderarmoedefonds	Non-profit	Flanders	Focused	Support local projects and initiatives.
UNICEF	NGO	International	Focused	Support global initiatives
De Katrol	Non-profit	Flanders	Focused	Education and family support at home
Ruyskensveld	Non-profit	Flanders	Focused	Emergency shelters for children and activities for children care
Concord	confederation	European	Focused	Platform for sensibilisation and information
Sos villages d'enfants	Non-profit	International	Focused	Support initiatives to alleviate infant poverty
Arc en ciel	Non-profit	National	Focused	Support initiatives to alleviate infant poverty in Belgium
Save the children	Non-profit	International	Focused	Information provider for EU policy
Fondation Engie	Private foundation	International	Focused	Give access to culture, education and healthcare to children

From table 2 above, a second screening has been conducted to determine how the Pelicano foundation differentiates itself from other actors in the Belgian non-profit landscape to fight infant poverty as displayed in Figure 6. The sample of NGOs and Associations selected from table 2 are based on two criteria: the coverage (vertical axis) and the approach (horizontal axis). The NGOs selected are those fitting this second screening, although not all NGOs could be included in the figure for clarity purposes. Nevertheless, three main clusters arise from this analysis and to understand where it comes from, we will first begin by describing Pelicano's social purpose.

Figure 6 : Non-profit organization landscape in Belgium



Source: Own computation

Pelicano is a foundation of public interest registered in the Belgian Monitor in 2009. This organisation is characterized by having a holistic approach to tackle infant poverty, which makes this non-profit unique in Belgium. Pelicano is working closely with CPAs/OCMWs, schools, and the department of social affairs to understand and help the situations of poverty within Belgian families. The foundation takes charge of all urgent problems when they first start helping a family which includes food, health and clothing. Pelicano then takes full responsibility to help all kids under 6 years old within the same household until they are fully active professionals and graduated. This help includes education, extra activities, social and medical needs and all other necessary requirements for the good development of the children. This long-term approach is unique compared to other active foundations in Belgium which addresses most aspects of infant poverty.

In Figure 6, Pelicano is positioned as a foundation having a holistic approach to fight infant poverty. By taking each individual child separately, the foundation is looking at every possible aspect impacting the child to put him/her out of poverty until they reach age of majority and become active members of society. Other direct participants differ in their approaches. Most Belgian NGOs and non-profit organizations are focusing their effort to one specific aspect of child poverty (referred as “focused” on the horizontal axes in figure 6), such as providing financial support to activities/associations helping children in need (Foundation45), providing information support (Foundation Roi Baudouin) or platforms to ameliorate the collaboration between NGOs involved in the alleviation of child poverty (concord federation).

Another important cluster in Belgium are shelters (e.g., the shelter Ruyskensveld in Flanders) providing urgent support for children and families in troubles. Those initiatives are designed to improve the situation of children in need for a specific period of time and are dealing with situations of urgency such as providing a shelter for children and teenagers in physical and psychological danger. Therefore, their objective is not to only tackle poverty issues but also broader social issues which are different from Pelicano's mission. International organizations such as UNICEF or Eurochild also offer support through various initiatives in Europe and around the world to help in the fight against infant poverty.

To understand how Pelicano differentiate itself from the other active NGOs fighting infant poverty in Belgium, a value curve analysis has been conducted (see figure 7). Six important variables have been selected to understand how a representative sample of Belgian NGOs within the three clusters identified in figure 6, decided to concentrate their attention to fight infant poverty.

Figure 7 shows that among the most representative organizations, Pelicano clearly differentiate itself on two main variables: the complete follow up of each kid benefiting from their support until they become active members of society and the important financial and material support they provide which fulfil every possible need the children would have when growing up just as any other child in Belgium. Moreover, a psycho-sociological follow up is provided by the foundation to its children, but in many cases some services are externalized, even though they are fully funded by Pelicano (e.g., a visit to the psychologist, activities of insertion, etc.).

We see that shelters fulfil those needs more than Pelicano, since those structures are dedicated to tackle socio-psychological poverty to a broader extend. This includes children and teenagers suffering from sexual abuse, violence or other psychological and/or physical harm.

Although Pelicano provides already a broad array of services and supports, this aspect of infant poverty is not directly targeted by them. Finally, three other important variables have been detected on which NGOs seem to give a great interest. The Foundation King Baudouin and federations of NGOs provide platforms to facilitate the creation of networks and the exchange of information. They can to some extend influence political decisions after consultations with governmental authorities.

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<sup>9</sup> Retrieved from : [https://www.eca.europa.eu/lists/ecadocuments/ap19\\_11/ap\\_child\\_poverty\\_en.pdf](https://www.eca.europa.eu/lists/ecadocuments/ap19_11/ap_child_poverty_en.pdf)

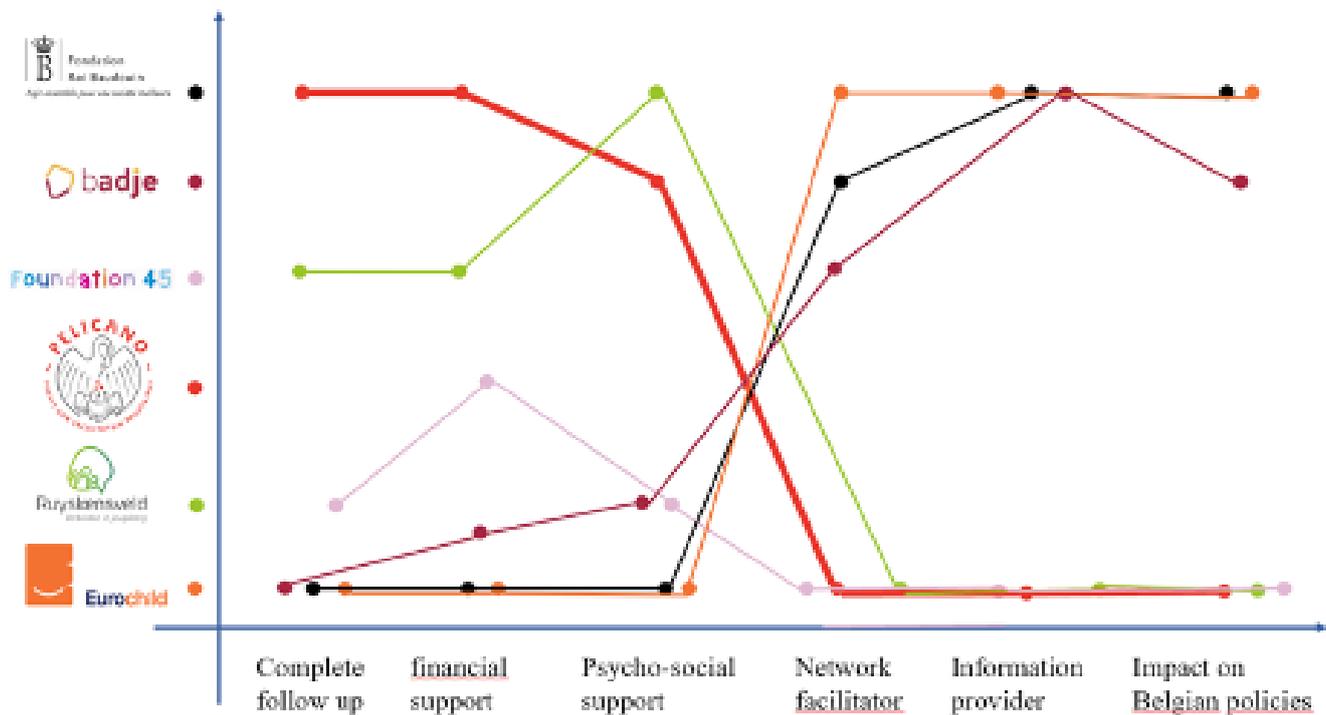
<sup>10</sup> Retrieved from: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32013H0112>

<sup>11</sup> See: <https://ec.europa.eu/esf/home.jsp>

<sup>12</sup> See: [https://ec.europa.eu/commission/priorities/deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights/european-pillar-social-rights-20-principles\\_en](https://ec.europa.eu/commission/priorities/deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights/european-pillar-social-rights-20-principles_en)

<sup>13</sup> See: [https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/european-semester-why-and-how\\_en](https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/european-semester-why-and-how_en)

Figure 7 : Value curve



Source: Own computation

## 02.4 Current legislations and Policy response

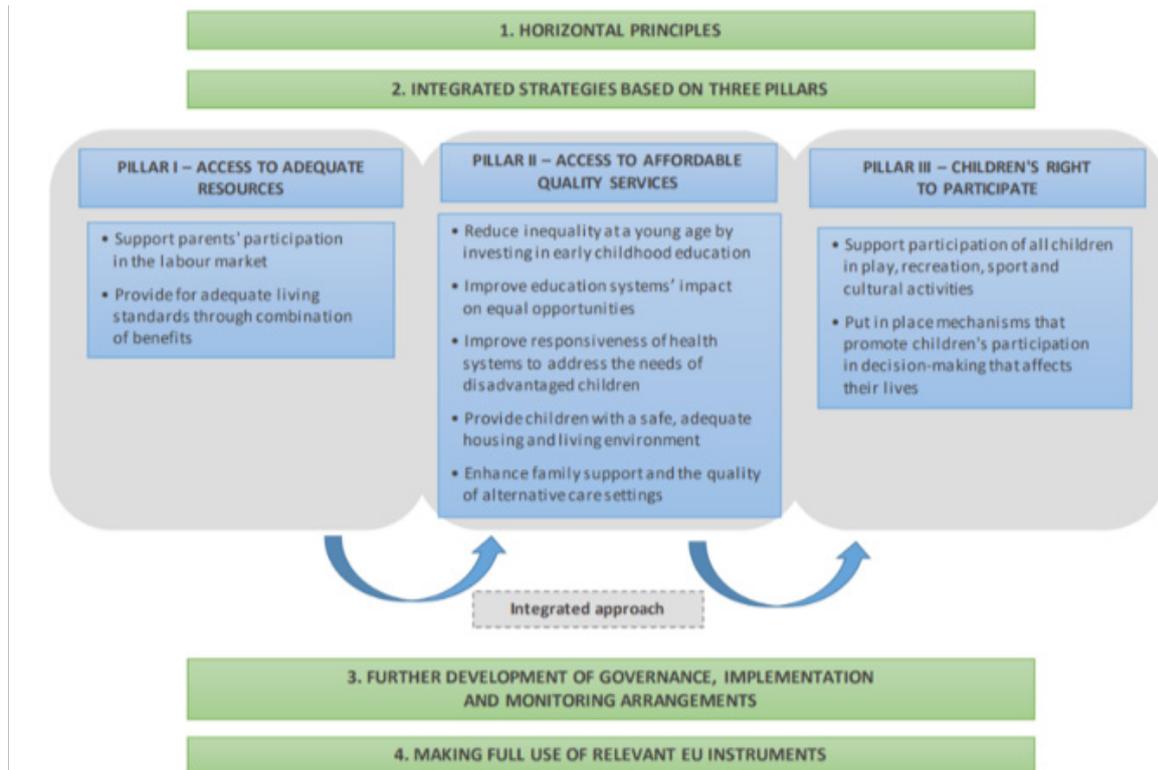
### 02.4.1 European level

The fight against poverty is at the heart of the Europe 2020 strategy (the EU's agenda for growth and jobs development between 2010 and 2020), which has set a target to lift 20 million people out of poverty or social exclusion by 2020. In June 2019, an audit review<sup>9</sup> of child poverty has been conducted to evaluate the effectiveness of the current policies implemented at the EU level which includes the EU Commission Recommendation on "investing in Children" (2013/112/EU)<sup>10</sup>, the European Social Fund (ESF)<sup>11</sup>, the European Pillar of Social Rights<sup>12</sup> and the European Semester<sup>13</sup>. The European legislative framework is built around a set of treaties and charters:

1. **The Treaty on European Union (TEU)**
2. **The Treaty on the Functioning of the European Union**
3. **The EU Charter of Fundamental rights**

In February 2013, the European Commission Recommendation on 'Investing in children: breaking the cycle of disadvantage', set the first key recommendations for member states concerning the development of a positive well-being for children and their families. Figure 8, displays the comprehensive integrated approach based on three pillars to implement those recommendations.

Figure 8 : EU Commission Recommendation on “Investing in children: breaking the cycle of disadvantage”



**Source:** ECA based on Commission Recommendation of 20 February 2013 – investing in the children : breaking the cycle of disadvantage 2013/112/EU.

In 2017, those recommendations were followed by the “European Pillar of Social Rights”, which put in place 20 key principles against which all EU member states (which includes Belgium) could benchmark themselves with their own social policies. Among those principles, some directly concern children and family policies. Those include the first principle: “right to quality and inclusive education”, principle 9: “work-life balance and principle 11: “right to affordable quality early childhood education and care” (ECE). The last principle emphasizes specific measures to protect children from poverty (Janta et al., 2019).

The European Platform for Investing in Children (EPIC), monitors the development of children and family’s policies in the European Union (EU). Figure 9 provides a thematic overview of initiatives in progress or achieved related to principle 1, 9 and 11 which cover the child and family policies in the EU.

Table 9 shows that lots of work is still in progress to tackle the issue of children AROPE in the EU. Nevertheless, current efforts have been devoted to establish a “Child Guarantee” at EU level. This new objective aims at ensuring that every child in every EU member state has access to critical services, such as healthcare, education, early childhood education and care (ECEC), adequate nutrition and decent housing.

Figure 9 : EU initiatives status related to children and families policies.

Principles	EU-Level initiatives	Status
1. Quality and inclusive education	<ul style="list-style-type: none"> <li>· Skills agenda for Europe</li> <li>· European solidarity corps</li> <li>· European Education Area</li> <li>· European Social Fund +</li> <li>· Erasmus +</li> </ul>	<ul style="list-style-type: none"> <li>· In progress</li> <li>· Achieved</li> <li>· In progress</li> <li>· In progress</li> <li>· Achieved</li> </ul>
9. Work-life balance	<ul style="list-style-type: none"> <li>· Directive on Work-Life Balance</li> </ul>	<ul style="list-style-type: none"> <li>· Achieved</li> </ul>
11. Childcare and support to children	<ul style="list-style-type: none"> <li>· Directive on Work-Life Balance</li> <li>· Common framework for high-quality early childhood education and care (ECEC)</li> <li>· Preparatory Action on a Child Guarantee</li> </ul>	<ul style="list-style-type: none"> <li>· Achieved</li> <li>· In progress</li> <li>· In progress</li> </ul>

**Source:** Janta, B., Davies, L. M., Jordan, V., & Stewart, K. (2019). *Recent Trends in Child and Family Policy in the EU: European Platform for Investing in Children: Annual Thematic Report.* p13.

In October 2018, the European Commission launched an 18-month feasibility study on a Child Guarantee proposal<sup>14</sup>. The study purpose is to assess the options to implement and create added value from a Child Guarantee, which would focus on four main groups of vulnerable children: those with special needs and disabilities, residing in institutions, recent refugees and migrants, and those living in precarious situations. Moreover, in January 2019, the European Parliament voted a draft regulation for the period 2021-2027 on the European Social Fund Plus (ESF+)<sup>15</sup>. This new regulation stipulates that all member states will have to allocate at least 5% of the ESF+ resources to the European Child Guarantee scheme. Now, it is up to the European Council (EC) to support those new regulations within the future EU budget.

<sup>14</sup> See : <https://ec.europa.eu/social/main.jsp?langId=en&catId=1251&newsId=9232&furtherNews=yes>

<sup>15</sup> Retrieved from : <https://ec.europa.eu/esf/main.jsp?catId=62&langId=en>

## 02.4.2 National level

At the federal level, the Belgian authorities have implemented two national plans in the fight against infant poverty. The first national plan was introduced in 2013-2014 and was the first federal implication to eradicate infant poverty outside the regional and communities' frontiers. This plan followed the EU recommendation on "Investing in children: breaking the cycle of disadvantage", which stresses the importance of integrating a preventative approach which calls EU countries to:

1. Provide income benefits for families and children, to be distributed across all income groups and avoid stigmatization and inactivity traps.
2. Facilitate access to the labour market to parents with an adequate pay
3. Encourage the participation in extra-curricular activities for children
4. Provide an affordable early childhood education and care services

Those measures were part of the long-term strategic goals of the "Europe 2020 Strategy" where social inclusion was one of the main objectives to instore a sustainable, inclusive and social market economy .

Following those guidelines, the Belgian national plan was built around three main political domains, which were according to the federal authority, essential to promote children well-being and the fight against infant poverty (De Block, 2013):

1. Access to adequate resources
2. Access to quality services
3. Equal opportunities for children

A fourth pillar completed this action plan: conclude horizontal and vertical partnerships between different political domains and different administrative levels. Each of those strategic objectives were then translated into different operational targets which accounted for 140 concrete actions in total. These objectives were not only targeting children, but also parents and families to improve their living conditions.

In concertation with regions and communities, a second national program was launched in 2015, which had two main purposes:

1. Instore a temporary administrative working group
2. Consult the main concerned actors.

The mission of this work group was directed by the Belgian state secretary to elaborate a second version of the initial plan by 2016-2017, taking into account further recommendations of regions and communities. This plan was part of the second objective of the third national plan to eradicate poverty in general in Belgium (Sleurs, 2016)

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<sup>16</sup> Retrieved from : <https://ec.europa.eu/social/main.jsp?catId=1060>

<sup>17</sup> Retrieved from : <https://ec.europa.eu/eurostat/web/europe-2020-indicators>

<sup>18</sup> Retrieved from : <https://pro.guidesocial.be/articles/actualites/40-millions-d-euros-de-moins-pour-la-lutte-contre-la-pauvrete.html>

Despite this first quinquennial plan, the current state of child poverty remains stable and the plan had no impact on infant AROPE rates in Belgium. Moreover, the federal government made recent economies on its annual budget of €100 millions for 2018. According to the “Cour des comptes”, the federal government saved 62 million of which 40 million was destined for the fight against poverty .

More surprising, even though social security budgets at the federal level are precisely estimated, it seems that a clear federal budget to fight infant poverty is not yet explicitly defined.

The overview of the current state of poverty shows that poverty is, despite all actions taken by the different governments and the countless NGO’s, still a serious problem. Poverty affects as mentioned earlier not only those who experience it, poverty causes damage to the whole society. In the next section we will discuss the magnitude of social and economic costs that are associated with poverty and how different studies have attempted to quantify these costs.

### 03. Literature review

According to Rank (2018), for every dollar spent on reducing poverty, a country could save at least 7\$ with respect to the economic costs of poverty. Thus, alleviating poverty is not only desired from a social aspect but is also justified from a cost-benefit perspective. So, besides the focus on the moral side that reducing poverty is just fair, poverty reduction could also be wishful based on economic grounds. When using this economic view, expenditures in order to reduce the poverty level could be seen as public investments from which a country could reap the long-term benefits such as a higher GDP, reduced crime rates and an improvement of life quality. These public costs can be split up in two categories; on the one side the costs that are incurred to alleviate poverty and on the other side the public costs that can be perceived as a consequence of poverty. Our focus will be on the latter. But it is a thin line. For example, an unemployment allowance can be seen either as a way to alleviate poverty (avoiding that people fall into poverty) or as a consequence of poverty (consequence of households that have a low market income). The costs as a consequence of poverty can further be split up into two categories; the costs of poverty to the government directly and to society as a whole. The costs to government include the incremental health care spending, higher cost of policing and the justice system, increased housing costs, greater government spending on allowances and living wages and the foregone income tax revenues. The costs to society at large include the cost of foregone productivity and economic activity and intangible victim costs of crime.

In the different studies discussed in the literature review, statistical associations between childhood poverty and outcomes as income, health and crime were used to estimate the cost to society of poverty. Surely, these results do not hold for every single person who grew up in poverty. But the estimations represent the average likelihood and are thus a good indicator of the costs.

The magnitude of these costs shows that it would bring huge rewards if poverty would be tackled effectively. Governments spend a lot on alleviating poverty and remedying the effects and consequences of poverty. But a shift to a focus on helping people thrive from a young age will ultimately be more beneficial and effective than having to spend money in order to cure the repercussions of poverty.

#### ***03.1 Lost tax revenue as a result of childhood poverty***

The first cost that will be discussed is the lost tax revenue. It could be seen as an opportunity cost rather than a direct cost of poverty. This could be interpreted as the resources that would come available if poverty was eliminated. It should be noted that it is difficult to estimate this cost since earnings capacity is affected by many factors of which growing up in poverty is just one. However, studies have shown that children who grew up in poverty have significantly lower earnings prospects later in life (Bramley et al., 2016). A lot of tax income for the state is lost since impoverished children grow up having fewer skills and are less able to contribute to the productivity of the economy. They are less likely to obtain a degree and to find a job.

A lot of potential is wasted due to poverty, it deprives the society of skills and talent resulting in lower productivity and lower economic growth. The economic potential of someone is dependent on gaining these skills already early in life. Earnings are in most cases a reflection of the skills and competencies of someone. People are generally paid according their productivity and added value. Low skills are associated with low productivity and thus a lower GDP. And since the government in Belgium claims about 23,3% of the GDP in tax revenues, a lower GDP means less revenue for the federal, provincial and local governments (Worldbank, 2017).

A first assumption that should be made in order to determine the possible impact of abolishing poverty is that those who are helped out of poverty will work, given the chance. This assumption is two folded: they should in the first place be willing to work if they are able and secondly, they are able to find a job (Briggs & Lee, 2012). It is clearly a hypothetical exercise to calculate the cost associated with unemployment. To assess this cost, another assumption should be made on which job a person would do to determine the lost tax revenue (Ozdemir & Ward, 2014). This is surely dependent on different factors such as age and education. Further, the opportunity cost also differs between moving into a full-time or part time job. For the sake of simplicity, it will be assumed that people move into full-time job, but it is important to investigate how far this is the case in reality. A survey conducted by the European Labour Force (2011) showed that a significant number of the women and men making the transition, rather take up part-time work than full-time work. In Belgium, around 15% of the men and 42% of the women aged 20-59 moved from unemployed into work taking up a part-time job in 2011 (European Commission, 2011). In some cases, it could be that they have family responsibilities, or they have difficulties to find a job that fits their skill level. However, this result should be taken with a grain of salt because the effects of the crisis where still perceived in the job market. As the lost tax revenue is dependent on the income, assumptions should also be made on the potential earnings of those moving into the job market. Since the potential value to the employers reduces as their skill level lowers as a result of unemployment, it may not be the case that they would be capable of earning the average wage of those at work.

Holzer et al. (2007) attempt to determine the economic costs of childhood poverty. Their analysis showed that children who grew up in poverty reduces the GDP in the US by nearly 1,3 percent, as a result of lower earnings and employment prospects. In their approach they determined the total economic value of increased productivity if childhood would be eradicated. In the study, statistical associations between childhood poverty and outcomes (e.g. adult earnings) were used to measure the effects of poverty.

Likewise, Laurie (2008) estimated the possible extra tax revenue that would be generated if the average income of the poorest quintile would rise to the level of the second quintile. This resulted in an additional annual income of \$21.154 per household and an increase of \$6.694 in tax income per household. This is even an understatement as social assistance and unemployment benefits are a relative substantial portion of the first quintile incomes. Furthermore, there will be a considerable saving in the unemployment allowances as households move up from the first quintile to the second, but this effect will be discussed further on.

Thus, growing up in poverty increases the likelihood of having a lower income as an adult. As discussed above, this results in a direct opportunity cost, namely the lost income. But it also forces these households to spend less compared to wealthier households. Hence, a lower spending means a lower GDP and lower VAT revenues. Decreasing childhood poverty by providing enough resources so that they can get a proper education will increase the chances on a higher income and accordingly a higher revenue for the government. Moreover, research has shown that an increase in economic growth results in a decline in poverty rates (Stevans & Sessions, 2008). This creates a vicious circle where investments to alleviate childhood poverty lead to a higher GDP, which in turn further decrease the poverty rate.

### **03.2 Employment and support allowance**

In the previous paragraph we discussed the lower earnings prospects as a result of poverty. But of course, not everyone will be employed. Poverty increases the likelihood of being unemployed. People with few resources can be prevented of full participation in the society. Research has shown that low income deteriorates people live chances. The knock-on impact of growing up in poverty is very strong as their future earnings are largely dependent on the acquired skills and competencies (Bramley et al., 2016). The consequences of childhood poverty are far-reaching as it leads to lower employment prospects. Already several studies have shown that the effect of growing up in poverty continues well into adult life (Blandon & Gibbson, 2006). It is generally known that lower qualified people will on average cause higher public spending through the benefits they receive. The earnings differential is definitely not only caused by an educational differential, there are many other factors that influence earnings later in life (Hirsch, 2008). Blanden, Hansen and Machin (2008) used a cohort study to measure the relation between childhood poverty and the chances of being employed in adult life. In their longitudinal study childhood poverty was classified as those aged younger than 16 living in households with less than £100 per week gross household income. The participants of this cohort study were then evaluated at age of 34 to measure the outcomes. The results revealed that childhood poverty reduced the probability of being employed at the age of 34 by 4 to 7 percent. In their calculation to determine the impact of abolishing child poverty they assumed that children who are lifted out of poverty will also be more skilled, educated and will be absorbed by the labor market. Additionally, it is assumed that the effect would apply to all, meaning that the increase in productivity is similar for each one helped out of poverty.

Surely, not all children who grow up in poverty will be poor in adulthood. Ratcliffe (2015) examined how childhood experiences determined adult achievement. Success was expressed by factors as completing high school by age of 20, enrolling in postsecondary education (college or certificate program) by age 25, completing a four-year college degree by age 25, and being consistently employed in young adulthood (ages 25 till 30). The study revealed that success as an adult is related to childhood poverty and the amount of time they lived in poverty.

Table 3 : Educational achievement by childhood poverty status.

	Never poor	Ever poor
<b>Educational attainment</b>		
<i>High school diploma by age 20</i>	92,7%	77,9%
<i>Postsecondary enrollment by age 25</i>	69,7%	41,4%
<i>Completed college by age 25</i>	36,5%	13%
<i>Consistently employed ages 25-30</i>	70,3%	57,3%

Growing up in poverty results in less academic success than their counterparts who experience their childhood in a wealthy family. But the author went even further and made a subset of "Ever poor" where he divided this category in those who are

Table 4 : Educational achievement by childhood poverty status. (2)

	Ever poor	
	Not persistently poor	Persistently poor
<b>Educational attainment</b>		
<i>High school diploma by age 20</i>	83,3%	63,5%
<i>Postsecondary enrollment by age 25</i>	47,6%	22,8%
<i>Completed college by age 25</i>	16,2%	3,2%
<i>Consistently employed ages 25-30</i>	63,6%	35,4%

persistently poor and those who are not persistently poor.

Looking to this subset of children who ever experience poverty, it is remarkable how significant differences exists between the two groups. Although 16,2% of those who experience poverty -but not persistently- is able to complete college, only 3,2% of persistently poor children obtains a college degree by age 25.

Educational attainment affects in turn the employment opportunities. According to Statbel (2019), the unemployment rate is strongly dependent on the education level. The unemployment rate for a low educated individual is four times higher than a high educated individual.

Table 5 : Unemployment rate linked to educational level.

Education level		4th quarter 2019
Low	Employment rate	35,9%
	Unemployment rate	11,8%
Middle	Employment rate	67,5%
	Unemployment rate	5,4%
High	Employment rate	83,7%
	Unemployment rate	2,9%

Source: Statbel.fgov

The low educated are those without a high school degree, the ones with a middle educational level are persons with a diploma of secondary education of the 3rd degree and the high educated are the persons with a higher education degree.

It is important to note that those living under the poverty line are not always able to be more active in the labour market. There is a minority of people living in poverty with disabilities, people recovering of medical conditions that prevent them of working, seniors, etc. In Flanders, approximately 1 in 6 people has a mild or severe disability (Vlaams Parlement, 2016). Only 43,1% of them were employed in 2015. Additionally, in case the children obtain a higher education level and have an increased skill level, the job market must be able to absorb these extra workers to yield economic benefits.

### ***03.3 Treating health conditions associated with poverty***

Many studies have examined the relation between income and health. Indicators of health status – mental health, life expectancy, time spent in hospital- have a clear correlation with income, showing that poverty can be a cause of poor health (Fang et al., 2009). Poverty in infancy is associated with several health issues. They are more likely to suffer from chronic diseases and diet-related problems. Moreover, it can affect the children's cognitive development and according to research, those living in poverty are three times more likely to suffer from mental health problems (British Medical Association, 2017). It has long term implications on their health which creates a higher burden on government spending on health. The relation between poverty and health is a widely discussed topic. While the relation between poverty and health runs both ways, research has shown that the main direction of influence is from poverty to poorer health (Phipps, 2003).

Research done in Canada (Laurie, 2008) investigated the relation between income and health on the one side, and between health and health expenditures on the other. The study linked income data to individual health care; the health expenditures were divided per income quintile. It appeared that the poorest quintile accounted for 30,9% of all public health expenditures while the group comprised only 20% of the population. The cost of health associated with poverty was estimated by looking to the savings if the health expenditures of the poorest quintile were equal to those of the second quintile. Of course, this method has some shortcomings, but it gives a decent estimate of the potential savings. It could be argued that raised incomes may not have an impact on some in the poorest 20%, particularly in the short run. However, a Guaranteed Income experiment in Manitoba gives us evidence to suggest that the effects of raised incomes on health outcomes reduce costs to the health care system. Forget (2011) has recently analyzed data from a 1970's experiment in Dauphin and has found numerous positive outcomes, including decreases in hospitalizations, emergency visits, and mental health visits as a result of implementing a Guaranteed Annual Income.

A study conducted in the UK that estimated the cost of poverty approached this in a different way. Bramley et al. (2016) looked to the additional use of hospital beds in the more deprived areas to determine the cost of health associated with poverty. A split up was made between acute and primary health care. The goal was to measure how much additional health care activity, expressed in bed-days (for acute health care) and issued prescriptions (for primary health care), is related to these areas with higher poverty. Additionally, they determined the public health cost attributable to poverty by looking to the budgets of each region of drug/alcohol treatment programs. Their analysis showed that poverty costs an additional £21,8 billion on acute health care, £7,1 billion on primary health and £1,6 billion on public health.

While both studies (Laurie, 2008; Bramley et al., 2016) focused of the cost of health due to current low-income levels, McLaughlin and Rank (2016) tried to determine the impact of childhood poverty on later health conditions, and these costs associated with a poorer health. In their research they used estimates of Case et al. (2002) in which the relation between income and self-reported categories of health (poor, fair, good, very good, excellent) is described. Next, data was collected on health expenditures by age group and health status. By rising the average income of those currently in poverty to twice the poverty line, the health expenditures related to child poverty were estimated. They found that expenditures related to childhood poverty accounted for 0,2% of the GDP.

Holzer et al. (2007) expressed the health costs as the value assigned to lost life as a result of children growing up in poverty. Although this calculation is valid as an economic calculation to determine the costs of poverty, it is not right to say that the public spending would be lower, or the GDP would be higher, by that specific amount. Longer life expectancy might for example raise the burden on public spending through pensions or health care.

### **03.4 Police and criminal justice**

Sariaslan et al. (2018) have established that children from the poorest twenty percent of the population were convicted of violent crimes seven times more often than children from the richest twenty percent. But surprisingly, the causality between poverty and criminality is rather low. Rather factors that are associated with poverty, such as literacy and the social-economical background, lead to higher criminal conduct. It has been shown that there is a strong correlation between school failure and the likelihood of criminal conduct. The literacy levels of offenders are significantly lower than those of the general population. Thus, school performance can be used as a good predictor of criminality, both for children and adults (Briggs & Lee, 2012). In Belgium, the gap between the least educated, who have at most a lower secondary education diploma, and the higher educated has widened. The former has a rate of monetary poverty of 27,2%, compared to 6,4% for the most educated (Statbel, 2018). Since the level of literacy is a good predictor of performance in school, literacy can be used as an intermediate variable in correlating poverty with crime. There are several reasons why literacy is correlated with criminality. First of all, having low literacy skills could prevent those people of securing well-paid jobs or even employment at all. Moreover, low literacy skills could lead to social exclusion resulting in higher criminal activity (Literacy, 2004).

To have an estimate of the cost of crime associated with poverty research have used literacy as an indirect link between poverty and crime (Briggs & Lee, 2012; Laurie, 2008). They used the joint probability of income and literacy across the different quintiles combined with the probability of crime across literacy quintiles. In doing so, this gives the probabilities that people in each income quintile will be involved in crime. This study, done in Canada, estimates that there could be a 4% reduction in the cost of crime if the literacy level of the lowest quintile would be raised to the 2nd quintile. This clearly shows the importance of a good education.

### **03.5 Intergenerational cost of poverty**

Children who grew up in poor families are not likely to escape poverty as adults. Deprivation during childhood can have lifelong effects on these individuals. They face many challenges that their peers of more wealthy families do not. Their parents have less resources to invest in a good education, at home they have fewer cognitive-stimulating materials and they likely grow up in more disadvantaged neighborhoods (Wagmiller & Adelman, 2009).

There is a high correlation between neighborhood income and high school dropout rates. A study done by the Boston Consulting Group (2007) illustrated this correlation in Toronto; in the neighborhood with the highest poverty rate the dropout rate was 56%, which is twice the city average compared to the wealthiest neighborhood where the dropout rate was merely 11%. Despite the fact that the transmission mechanism of intergenerational poverty is ambiguous, there is a general consensus that success or failure in school is a key factor in determining which children are able to have a flourishing career and which will remain behind (Laurie, 2008). Especially in the current job market, a degree becomes more critical in securing a well-paid job. Many studies done on intergenerational poverty have shown that improving the educational attainment will lessen the chance on living in poverty later in life through increased human capital (Behrman et al., 2017).

The “transfer” of poverty can be seen as a complex set of positive and negative factors influencing the individual chances on poverty. However, there are several other factors which affect an individual’s life-course well-being such as race, education and household composition (Bird, 2013) Exposure to poverty in childhood doesn’t lead automatically to poverty when becoming adults. It is certainly possible to grow in deprived circumstances and become wealthy, it is reflected in the promise of the American Dream.

The majority of the Americans -72%- believe that it is possible to move up the economic ladder during one’s lifetime and across generations (Fass, Dinan & Aratani, 2009). However, an American study indicated that 42 percent of children born to parents in the lowest income quintile remain in the bottom as adults and another 23 percent rise only to the second quintile, while 39 percent of children raised in a wealthy family at the top of the income distribution remain in the highest quintile, with another 23 percent moving to the second fifth (Isaacs, 2007). In line with these results, research done in Canada estimates that 20-25% of the children who grow up in poverty are likely to remain poor (Corak & Heisz, 1998).

### **03.6 Housing**

Many people are facing problems to find a healthy and affordable home. In Belgium, the housing policy is strongly focused on property acquisition, which is financially unfeasible for many citizens. They enter the rental market, where they are faced with a shortage and long waiting lists for social housing, and with a lack of affordable and decent housing on the private market. Tenants have a poverty risk that is almost five times as high as that of owners, namely 36,2% versus 7,6% (Armoedebestrijding, 2018). Besides, the provision of social housing also requires a big budget. It is responsible for the increasing debt of the Flemish government (Gordts, 2016). It is estimated that the construction of such a house costs approximately €130 000. 83% is borne by the social housing companies. The government pays the difference; €22 900 plus the financing costs. The annual depreciation takes place over a period of 33 years, which results in an annual cost of around €1000, depending on the interest rates (Mallants, 2019). There are in Flanders more than 168 000 social houses, in Wallonia more than 100 000 social houses and in Brussel approximately 36 000.

The insights of our literature review allow us to make the best possible estimate of the different costs associated with poverty. In the following section it is explained which methodology is applied to determine the different costs. These estimates are then used to evaluate the total impact by means of a cost-benefit analysis. In the methodology, we explain in detail how we apply a cost-benefit analysis in order to ultimately assess the total impact of the project.

## 04. Methodology and Data.

### 04.1 Methodology

This subsection describes the methodology used to estimate the total impact of Pelicano’s social program on the Belgian society. To do so, following explanations provide details on the approach used, the assumptions taken and the database built.

#### 04.1.1 Approach

Pelicano invests in a targeted group of deprived children via social economic measures. Those programs lead to high costs, but also to important benefits. The purpose of this business case is to evaluate the total economic and social impact of the Pelicano project, namely alleviating infant poverty in Belgium. In this context, a cost-benefit analysis will be conducted, based on the methodologies used in the academic literature evaluating the social economic measures in Flanders and Belgium (D’Addio et al., 2005; Vandenbroucke et al., 2018).

The approach followed in this research consists of addressing three empirical questions. Firstly, we determined an overall estimate of the possible costs savings the government could gain by alleviating infant poverty in Belgium. Secondly, we determined the total economic impact of one child joining Pelicano’s social program over his whole active life (until retirement). Finally, we calculated the total impact of Pelicano’s program over the next 15 years considering the current age distribution, the in- and outflow of children and its goal to reach 2000 children by 2025.

Table 6 : Sample of cost savings for the government

Cost savings	Estimation approach
Opportunity cost	<i>Difference between the sum of VAT contribution, Social security contribution and income tax of one child participating in Pelicano social program and a regular child growing up in poverty.</i>
Cost of health	<i>Total savings if the health expenditures of the first income quintile would be decreased to the health expenditures of the second income quintile, applied to the scope of the Pelicano project</i>
Cost of crime	<i>First the cost of crime attributable to poverty is determined, then divided by the amount of people living in poverty to calculate the cost of crime attributable to poverty for one person.</i>
Unemployment allowances	<i>The education level is used as an intermediate variable to estimate the difference in unemployment allowances between an average child and a child who grew up in poverty</i>
Intergenerational cost	<i>An intergenerational mobility rate is used to determine how many children inherit the economic status of their parents</i>

The first empirical question is answered based on available data described in the data section of this report. Table 6 summarizes the sample of the yearly cost savings the government could gain by alleviating infant poverty in Belgium with our approach to estimate each cost.

Our approach to determine the economic and social impact of Pelicano on the different stakeholders follows a cost-benefit analysis (CBA). This conceptual framework can be applied to any quantitative or systematic appraisal of a private or public social project to determine whether it is worthwhile investing in a given social project from an economic and social perspective. Hence, a CBA as an evaluation method is a useful tool for public decision-making and gives a comprehensive framework for social accounting (Cordes, 2017). This is the reason why the European Commission uses a CBA to determine which social project would impact significantly its economy and the job market in Europe and at the same time, determine which project would offer the most added value for money. In this context, a cost-benefit analysis has been expressly required as a basis for all decision making to finance major European social projects which includes the Cohesion Fund and the Operational Programmes (OPs) of the European Regional Development Fund (ERDF). Consequently, this valuation framework has been one of the key elements of the overall strategic approach within the Europe 2020 strategy, as expressed earlier in section 2.4 (Sartori et al., 2014).

In line with the academic literature on the cost-benefit analysis of early childhood interventions and social project investments, the method used in this study follows the approach of D'addio et al. (2005) and Karoly (2010). Hence, the analysis is built by comparing the situation of children receiving help from Pelicano's social program and those who do not. The difference between the two will define the economic and social impact of Pelicano's program on the society and on the government. In this context, this study is limited to the most important stakeholders potentially affected by Pelicano's social program: targeted group of children (0-6 years), Pelicano, the society and governmental authorities. By doing so, the costs of infant poverty used to answer the first empirical question (see table 2) are also included in this approach. Table 3 summarizes our sample of costs and benefits per stakeholder.

Similar to the study of Hozler et al. (2007) and Laurie (2008), we considered the reduced adult earnings of children growing up in poverty, the relative higher unemployment allowances, the increased cost of crime attributable to poverty, the intergenerational cost of growing up in poverty and the increased health care costs. These costs were included because: (1) they were identified by prior research as a negative outcome arising from childhood poverty; (2) they are consistent with the capability's perspective used to frame our analysis; and (3) data was available to quantify this cost. The opportunity cost in table 2 is not explicitly presented in table 3. Nevertheless, this cost is still calculated and is the difference between the sum of expected income tax, social contribution and VAT (see benefits in table 3) of a Pelicano child and the sum of the same benefits provided by a child that doesn't benefit of the social program. Hence, this opportunity cost is implicitly calculated in the analytical formulation of the cost-benefit equations (see equations 1 to 11). Certainly, there are other costs of infant poverty that are not included in this study; however, data was not available to make a reliable estimate.

For example, child poverty clearly causes emotional harm to the children who live in poverty. Unfortunately, we were not able to obtain data to estimate the cost of this emotional harm.

Table 7 : Summary table of benefits and costs per stakeholder

	Without Pelicano program		With Pelicano program	
	Item	Stakeholder	Item	Stakeholder
<b>Costs</b>	Costs of health	Government	Pelicano program	Pelicano Foundation
	Cost of crime	Government		
	Unemployment allowances	Government	Pelicano's operational costs	Pelicano Foundation
	Intergenerational cost	Government		
<b>Benefits</b>	Expected net-income in adulthood	Children	Expected net-income in adulthood	Children
	Expected tax and social security contribution.	Government	Expected tax and social security contribution	Government

The analytical approach to the cost-benefit analysis is described below. The total aggregated economic impact of Pelicano's social measures is defined as follows:

$$\sum_{t=0}^N \frac{EC_t^{PC} - EC_t^{NPC}}{(1+r)^t} \quad (1)$$

With :

$r$  = Discount factor. For further details see section 4.1.4. Social Discount Rate  
 $N$  = Time period studied.  $N=15$  years for the total impact of Pelicano's project and  $N=60$  years for the impact on one child over its whole active life.

$EC_t^{PC}$  = Expected contribution of all stakeholders for a Pelicano child in year  $t$

$$EC_t^{PC} = \sum_{i=1}^3 EC_t^{PC}(\text{Stakeholder } i) \quad (2)$$

Hence, the contribution of each stakeholder has to be determined. For a Pelicano child, the expected contributions are defined as follow:

$$EC_t^{PC}(\text{Government}) = \sum_{j=1}^3 p^{PCj} \times (VAT_{t,j} + SS_{t,j} + IT_{t,j}) \quad (3)$$

$$EC_t^{PC}(\text{Children}) = \sum_{j=1}^3 p^{PCj} \times (1 - t_c) \times w_{t,j} \quad (4)$$

$$EC_t^{PC}(\text{Pelicano}) = -(DC_t^{PC} + IDC_t^{PC}) \quad (5)$$

Where :

$p^{PCj}$  = probability that outcome of a Pelicano child (PC) will be in scenario  $j$  ( $j=1$ =low case), ( $j=2$ =base case) and ( $j=3$ =high case). Each scenario represents a potential future income during adulthood for each child joining Pelicano's social program, which is based on future educational attainment. For further details see assumptions in section 4.1.2.

$VAT_{t,j}$  = total VAT-contribution during year  $t$  associated to scenario  $j$

$SS_{t,j}$  = total social security contribution during year  $t$  associated to scenario  $j$

$IT_{t,j}$  = Total paid income taxes during year  $t$  associated to scenario  $j$

$t_c$  = Tax rate during year  $t$

$DC_t^{PC}$  = direct cost supported by Pelicano to finance a child during year  $t$ .

$IDC_t^{PC}$  = indirect costs (overheads) supported by Pelicano to operate and help a child during year  $t$ .

$w_{t,j}$  = expected income of one child during adulthood during year  $t$  associated to scenario  $j$ .

The total expected contribution of all stakeholders participating in Pelicano's social program is then defined as follow:

$$EC_t^{PC} = \sum_{j=1}^3 p^{PCj} \times \left[ \underbrace{VAT_{t,j} + SS_{t,j} + IT_{t,j}}_{\text{Government}} + \underbrace{(1 - t_c) \times w_{t,j}}_{\text{Children}} \right] - \underbrace{(DC_t^{PC} + IDC_t^{PC})}_{\text{Pelicano}} \quad (6)$$

For non-Pelicano children, the same approach has been used:

$EC_t^{NPC}$  = Expected contribution of all stakeholders for a non-Pelicano child in year  $t$

$$EC_t^{NPC} = \sum_{i=1}^3 EC_t^{NPC}(\text{Stakeholder } i) \quad (7)$$

The contribution of each stakeholder is then defined as follows:

$$EC_t^{NPC}(\text{Government}) = \sum_k p^{NPC,k} \times (VAT_{k,t} + SS_{k,t} + IT_{k,t}) - [u_t + H_t + C_t + G_t] \quad (8)$$

$$EC_t^{NPC}(\text{Children}) = \sum_{k=1}^2 p^{NPC,k} \times (1 - t_c) \times w_{k,t} \quad (9)$$

$$EC_t^{NPC}(\text{Pelicano}) = 0 \quad (10)$$

With :

$p^{NPC,k}$  = probability that a Non-Pelicano child (NPC) will be fall in the low case scenario ( $k=1$ ) or in extreme poverty case scenario ( $k=2$ ).

$u_t$  = cost of unemployment allowances during year  $t$

$H_t$  = Health cost associated with poverty during year  $t$

$C_t$  = Crime cost associated with poverty during year  $t$

$G_t$  = Intergenerational cost during year  $t$

For further details on how those costs are estimated see section 4.2.1.

The total expected contribution of all stakeholders for not participating in Pelicano's social program is then defined in equation (11) bellow:

$$EC_t^{NPC} = \sum_{k=1}^2 p^{NPC,k} \times \left[ \underbrace{VAT_{k,t} + SS_{k,t} + IT_{k,t}}_{\text{Government}} + \underbrace{(1 - t_c) \times w_{k,t}}_{\text{Children}} \right] - \left[ \underbrace{u_t + H_t + C_t + G_t}_{\text{Government}} \right] \quad (11)$$

The total impact is then estimated by combining equations (1), (6) and (11).

This cost-benefit model has been built in Excel and is applied to both one child and on the whole current children population of the Pelicano Foundation. To answer our third empirical question (total impact in the next 15 years including all Pelicano children), the total number of children currently enrolled in the social program with their respective ages was needed. Therefore, Pelicano provided the current age distribution of the Pelicano children as shown in table 8:

Table 8 : Pelicano children population

Age	Amount	%
6-12Y	731	42%
12-18Y	992	57%
>18Y	21	1%
<b>Total</b>	<b>1744</b>	<b>100%</b>

Based on this information, we assumed that the number of children within each age tranche was equally distributed (see assumptions for more details). This assumption was necessary, to understand the in- and outflow of children benefiting from the social program and to build a projection model that estimates the future children population. We then made a second assumption that the compounded growth rate to reach 2000 children by 2025 will stay constant over the next 15 years. Hence, we reach an annual compounded growth rate of 2,78% by following the formula:

$$r = \sqrt[5]{\frac{2000}{1744}} - 1 = 2.78\% \quad (12)$$

By doing so, we could then determine how many children would leave Pelicano to start their active life (added future benefits) and how many new children would join the program (added costs for Pelicano and society) to have a concrete representation of the future impact of Pelicano's social program on the society in the next 15 years (for more details please see complete age table in Appendix V).

Finally, we determined for our empirical question two and three, a payback period to determine when all negative cash flows would be reimbursed in the future. However, the main disadvantage of using a payback method is that it ignores the time value of money, which is in our case very important to include given the long-time horizon studied (Bhandari, 2009). To overcome this issue, we decided to adapt the formula and include all future net present cumulative cash flows until it reaches a value of zero as explained in the following formula:

$$0 = \sum_{t=0}^N \frac{EC_t}{(1+r)^t} \quad (13)$$

Where :

$N$  = *payback period. It is the required number of years necessary for equation (13) to be valid.*

$EC_t$  = *Total expected cash flow from the cost-benefit analysis in year  $t$ .*

$r$  = *Social discount rate. For further details see section 4.1.4. Social Discount Rate*

Finally, a sensitivity analysis has been performed to provide a range for each result found. By doing so, we determined a lower and higher bound for the social discount rate (see section 4.2.2 Discount rate). The cost-benefit analysis has been conducted in Excel with further details on all calculations made (see Excel file). Nevertheless, to build this model, several assumptions had to be made, which will be presented in the next section.

### **04.1.2 Assumptions**

This subsection presents the assumptions made to conduct a CBA in the context of Pelicano's social program. This complete list below has been used for the valuation model performed in Excel and to estimate all costs and benefits included in the CBA.

#### **Scenarios and personas of a PC and NPC**

In the literature review we already expressed the importance of pursuing a good education to secure a future well-paid job. The focus of Pelicano is to give a child all the chances he needs to finish his studies with the goal to earn a decent living. Without the help of Pelicano these children will likely have difficulties in finishing their education which is problematic for finding a job. Clearly, out of the 2000 children that Pelicano will be able to help by 2025, not every child will be equally successful. Of course, a child who will be less successful in life will contribute less to society. Therefore, it is important to include different case scenarios in our estimates as they represent an important possible outcome for the society.

In this context, we made use of four personas who each represent a possible outcome for a Pelicano-child and a Non-Pelicano child (a regular child who do not receive any help under the same poverty conditions). This persona method was originally developed for the IT sector but has been progressively applied in many other contexts (Nielsen & Storhaard Hansen, 2014). It is a perfect way to make explicit assumptions and to communicate the data in an engaging way. In our encounters with people we are inclined to add the person to a previously formed category based on previous experience. By creating this persona, we want to transcend the existing stereotypes. This makes it possible to really imagine their life which makes it easier to interpret the data.

For Pelicano children, we created three different personas who each represent an outcome: a low case, base case and a high case scenario. We assume that 50% of the Pelicano-children will be represented by our base case. In the base case, the child obtains a bachelor's degree and becomes a teacher in high school. The persona will start his career with a gross income of approximately €2300. But as seniority goes along with a pay increase, his wage steadily increases over the years and after 20 years of experience he receives a gross income of around €3500. This is a little bit higher than the upper level of the 3rd quintile, which implies that 60% of the fully employed people earns less and 40% earns more.

25% of the Pelicano children will do less good and they will earn less than average but are still employed most of the times and are living above the poverty threshold. This low case scenario illustrates the life of a child who just finished high school but decided not to continue studying. He takes up a job as a production worker but entering the job market as an unskilled worker will result in a relatively low gross income. During his career he became twice two years unemployed. At the age of 40, he earned a gross income equal to the upper level of the first quintile<sup>19</sup>, meaning that 20% earns less than him and 80% had a gross income higher than our persona in the low case.

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<sup>19</sup> Statbel (2019) : gross income decile distribution

For the 25% left, we assumed that a Pelicano child will fall in the high case. The persona accomplishes his university degree and starts working in the chemical sector, which is the highest paying sector in Belgium. We were conservative in the wage setting as we are well aware that on average, the starters wage will be lower of an individual with another University degree. After 20 years of experience, he earns a gross salary of approximately €5500. This is equal to the upper level of the 9th decile, indicating that 90% earns less and 10% earns more.

For the non-Pelicano children, we assumed that 65% will fall in the low case (the same low case as for a Pelicano child) and 35% will join the "extreme poverty case". These probabilities are in line with the results of Vaalavuo (2015) who studied the poverty dynamics in Europe and published her findings at the Publications Office of the European Union. She discovered that 35% of children in Belgium at risk of poverty will persistently stay poor. Moreover, she argues that the longer a person stays in poverty the harder it is to get out of those poor conditions. Hence, even though poverty persistence may vary by age group, the duration of years staying in poverty and geographical location, this proxy has been used to estimate the probability that a poor child will stay poor during adulthood. Additionally, the choice of this probability is justified by the fact that children joining Pelicano's social program are those in extreme poverty where the regular social services in Belgium are not sufficient to help those children anymore. Therefore, it is reasonable to assume that those children have less chances to succeed in life or higher chances to stay poor if they receive no help. Nevertheless, subsequent studies could investigate further the probability to fall into poverty after growing up poor in Belgium to have a detailed estimate for this analysis. In this extreme case scenario, we then assumed that children were not contributing to society and for the sake of simplicity the persona would earn a living wage during its whole life.

Finally, all personas were built based on the data retrieved from Statbel<sup>21</sup> on the income decile distribution in Belgium to make sure that these are likely outcomes (see data section for further details).

### **Benefits assumptions**

- **Net Income for Pelicano children:** We assume that retirement is reached at 65 years old and that pension contribution is completely consumed during retirement with an NPV=0. Hence, the valuation of the CBA stops at 65 years old. Incomes are kept constant during periods of 6 years. The low case net income starts at 18 years old, the base case and the high case both at 24. Finally, we kept the social security level at 13,07% of the total yearly income.

- **For the extreme poverty case:** For the sake of simplicity, we assumed that during his life he earns a wage equal to the living wage.

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<sup>20</sup> Statbel (2019) : gross income decile distribution

## Costs assumptions

- **Cost of health:** This calculation assumes that health expenditures percentages per income quintiles are the same in Belgium and Canada. We also assume that all these children, without the help of Pelicano, would be in the lowest income quintile and that due to the help of Pelicano they would be in the second quintile.

- **Cost of crime:** We used information on the cost of crime in the UK considering that the crime rates in Belgium and UK are close to each other. The cost of crime in the UK can be used as a proxy for the cost of crime in Belgium bearing in mind that the crime rates in both countries are very similar. The study conducted by Laurie (2008) revealed that 4% of the crime-related costs are attributable to poverty; this result applies for Belgium

The total savings per person lifted out of poverty are equal to:

$$\frac{\text{total cost of crime associated with poverty}}{\text{people living in poverty in Belgium}}$$

Moreover, we assumed that the cost of crime associated with poverty can be equally attributed to each person living in poverty

- **Opportunity cost :** For the opportunity cost, we have worked out a possible life story for each persona and attached an income and spending pattern to each of them to have an estimate of the total tax earnings for the government. By attaching a probability to the several personas, the difference in the total VAT, social security and income taxes between a Pelicano child and a non-Pelicano child can be estimated.

- **Unemployment cost :** We assume that a child with a mother who is low educated, grows up in poverty and represents a non-Pelicano child. Moreover, Onderwijs Vlaanderen (2019) found that children with a low educated mother have a 20% higher chance of leaving school early. Therefore, we assumed that the share of low educated individuals will be 20% higher than the national average if they grow up in poverty

## Children in- and outflow assumptions

To estimate the total impact of Pelicano over the next 15 years an assumption had to be made on the in- and outflow of children at Pelicano. Pelicano provided the total effective number of children per age tranche (see table 5 in Methodology). Hence, to reach Pelicano's target of having 2000 children by 2025, we assumed that each year, the same number of children will jump into the next age tranche to build a projection model for the upcoming 15 years. By doing so, we can calculate the in- and outflow of children benefiting from the social program. Moreover, this assumption helped us to determine how many new children should enter Pelicano to achieve its goal. We then made a second assumption that the compounded growth rate of the total number of Pelicano children between 2020 and 2025 will remain constant (a growth rate of 2,71%). More details are provided in Annex VI.

## 04.2 Database

### 04.2.1 Cost estimates

#### Cost of health associated with poverty

Following the approach of Laurie (2008), the cost of health is calculated by comparing health expenditures in Canada and Belgium. Unfortunately, there is no available data on health spendings per income quintile in Belgium. Hence, this calculation assumes that expenditures percentages per income quintiles are roughly the same in Belgium and Canada. As the health spending per person in Canada is in line with the average health spending per person in Belgium this should give a fairly accurate estimate. The research of Laurie (2008) indicated that the lowest quintile accounted for 30,9% of the total health expenditures and the second quintile for 24,4% of the total health expenditures. We could find the health cost associated with poverty by calculating how much would be saved if health expenditures of the poorest 20% would be equal to those of a higher quintile.

To measure the potential savings, the income of the lowest quintile is raised to that of the second quintile, accordingly, the health expenditures are reduced to the same level of the second quintile. 77% of the total health expenditures are incurred by the Belgian government (OESO, 2018). Based on a total health expenditure of 40 billion, a potential saving of 2 billion could be achieved. It is important to recognize that the potential savings are highly dependent on the manner poverty is mitigated. Since each quintile contains around 2,24 million people, the estimated reduction in total health expenditures per person can be calculated by dividing the total reduction by the amount of people in the poorest quintile.

Table 9 : Cost of health associated with poverty.

<b>Cost of health associated with poverty</b>		
Total health expenditures Belgium	40,104,320,000.00 €	
Contribution government	77%	
<b><i>Income quintiles (each quintile contains 20% of the population)</i></b>	<b><i>Share of total health expenditures per quintile</i></b>	<b><i>Estimated distribution of total health expenditures (2015)</i></b>
Poorest quintile	31%	9,542,020,857.60 €
Second quintile	24%	7,534,799,641.60 €
Estimated reduction in total health expenditures		2,007,221,216.00 €
Estimated reduction in total health expenditures per person	2248000	892.89 €

Comparing our estimates with other research done on health-related costs of poverty that uses different methodologies, confirms that our estimate probably underestimates this cost. Mackenbach et al. (2007) estimate that the inequalities-related losses to health account for 20% of the costs of health care systems in the EU. But surely the actual savings depend on the way poverty is eradicated. As childhood poverty is tackled by the Pelicano project, the savings are accumulated over the whole lifetime of those children. Many assumptions are necessary to determine the total impact if 2000 children are lifted out of poverty by the help of Pelicano (see assumptions in section 4.1.2). In our calculations we assume that all these children, without the help of Pelicano, would be in the lowest income quintile.

### **Cost of crime associated with poverty**

This cost is one of the most difficult to express in monetary terms. First of all, knowing how many crimes are committed every year in Belgium is already difficult to estimate. Nevertheless, information on physical violence or property crimes is available, but data on white-collar crime (e.g., embezzlement) or cyber-related crime is less complete. Secondly, there is not a common approach to determine the cost of crime. Briefly said, many assumptions have been made to calculate this cost (see Assumptions in section 4.1.2). Our estimation is based on the methodology of Laurie (2008), as discussed in the literature review. There is no available data on the cost of crime in Belgium. Therefore, we used information on the cost of crime in the UK considering that the crime rates in Belgium and UK are close to each other. Heeks et al. (2018) calculated the cost of crime in the UK. In their study, the cost of crime contains three main cost areas;

- Costs of crime prevention (e.g., burglar alarms)
- Costs as a consequence of crime (e.g., the cost of property stolen)
- Costs in response to crime (e.g., costs of the police and justice system)

They attached a cost to each category of crime and then multiplied it by the number of crimes in that specific category. Because we want to evaluate the direct impact of poverty on government spending, we only include the costs in response to crime in the cost of crime. To estimate the cost of crime we adapted the number of crimes to the population of Belgium by dividing the number of crimes recorded in the UK by the ratio of the population of the UK and Belgium. Thus, the total cost of crime in UK could be used as a proxy (adapted to differences in population) to get the total cost of crime in Belgium and so the possible reduction in the cost of crime.

Under the assumptions described in section 4.1.2. (see cost of crime), an estimation has been conducted to determine how much the society would save if 2000 children were lifted out of poverty and the costs associated to crime were completely alleviated.

The cost of crime in the UK is estimated to be €56 Billion in 2015/2016 (Heeks et al., 2018). By screening only, the cost in response of crime and taking into account the total Belgian population, the cost of crime in Belgium would be around €2,36 billion.

According to Laurie (2008), 4% of this total cost is attributable to poverty. Roughly 16% of the people in Belgium live in poverty (Statbel, 2018). This gives a cost of 51,51€ per year per person living in poverty. Ultimately, we interpret this result in our cost-benefit analysis as follows; for each child helped out of poverty, each year more than €50 can be saved in terms of crime-related costs. Thus, if poverty would be fully eradicated in Belgium, the total cost of crime would be reduced with more than €94 000 000. Nevertheless, we should interpret this estimate cautiously. On micro-level, we assumed that every individual living in poverty is equally responsible for the cost of crime. However, if the Pelicano project is able to help 2000 children out of poverty, this certainly will have an impact on the total cost of crime in the long run.

Table 10 : Cost of crime associated with poverty.

cost of crime associated with poverty	
Total cost of crime	2,361,176,774.67 €
crime attributed to poverty	4%
Total population Belgium	11460000
percentage living in poverty	16%
total cost of crime associated with poverty	94,447,070.99 €
cost per person living in poverty	51.51 €

### ***Opportunity cost as a result of poverty***

Our approach to calculate the opportunity cost, namely the lost tax revenue through spending and income tax, differs from existing research (Holzer, 2007; Laurie, 2008). As their focus is on the macro-level, they make an estimation of the costs by expressing it as a % of the GDP. Our goal is to estimate the impact of helping 2000 people out of poverty, which is more focused on a micro-level. Therefore, we made use of several personas who each represent a possible outcome of a Pelicano-child (see Assumptions in section 1.4.2).

By attaching a probability to the several personas, the total savings could be calculated. For the opportunity cost in particular, we have worked out a possible life story for each persona and attached an income and spending pattern to each of them to have an estimate of the total tax earnings for the government.

These savings have been calculated by looking to the total tax earnings that these personas generate and compare them to the total tax earnings that the government would earn if these children weren't lifted out of poverty. Non-Pelicano children are as well represented by two persona's, namely the low case used as persona in case of a Pelicano child, although a higher probability is attached to that persona, and an extreme poverty case (see Assumptions in sections 1.4.2.).

Then, we applied the tax system of Belgium on the gross salary to calculate the total social security contribution and the total income tax. Based on the assumed incomes of each persona we could determine the net income of each persona in a year. We then used the annual household budget survey as an allocation key for the spending behaviour of our personas. Hence, we could apply the different VAT tariffs in Belgium to the different spending categories in order to calculate the total VAT contributions. Undoubtedly, this is not an exact representation of the spending behavior as a wealthy person would probably allocate a bigger part of his total budget on restaurant visits compared to a poor household who will likely almost never go to a restaurant. But increased income definitely will result in higher spending which will boost the economy. By multiplying the probabilities of falling in one of the scenario's with the sum of the corresponding VAT, social security and income tax, the average contribution of a Pelicano child and a non-Pelicano child could be determined. The difference between the two determined the opportunity cost associated with poverty for the government (see table 6).

Table 11 : Opportunity cost due to poverty.

Opportunity cost				
Low case	25%	Total VAT contribution	48,053.84 €	Pelicano child
		Total social security contribution	170,979.44 €	
		Total tax on income	371,596.70 €	
Base case	50%	Total VAT contribution	57,505.40 €	
		Total social security contribution	233,688.91 €	
		Total tax on income	564,183.70 €	
High Case	25%	Total VAT contribution	78,140.99 €	
		Total social security contribution	338,548.06 €	
		Total tax on income	906,317.42 €	
Average Pelicano child		<b>VAT contribution</b>	<b>60,301.41 €</b>	
		<b>Social security contribution</b>	<b>244,226.33 €</b>	
		<b>tax on income</b>	<b>601,570.38 €</b>	
Low case	65%	Total VAT contribution	48,053.84 €	Non-Pelicano child
		Total social security contribution	170,979.44 €	
		Total tax on income	371,596.70 €	
extreme poverty	35%	Total VAT contribution	42859.5552 €	
		Total social security contribution	- €	
		Total tax on income	- €	
Average non-Pelicano child		<b>Total VAT contribution</b>	<b>46,235.84 €</b>	
		<b>Total social security contribution</b>	<b>111,136.64 €</b>	
		<b>Total tax on income</b>	<b>241,537.86 €</b>	
Total opportunity cost		VAT contribution	14,065.57 €	
		Social security contribution	133,089.69 €	
		tax on income	360,032.52 €	
Total opportunity cost/year		VAT contribution	312.57 €	
		Social security contribution	2,957.55 €	
		tax on income	8,000.72 €	
		<b>Total Opportunity cost</b>	<b>11,270.84 €</b>	

The results indicate that the opportunity cost is substantial. Especially, the difference in tax revenue for the government is a considerable amount. We can translate this number as follows; A Pelicano child will on average pay around €8000 more income taxes per year compared to a child who grew up in poverty and thus will on average earn less. This is in line with the research of Laurie (2008), in his study he determined that mitigation of poverty would result in an increase in annual income taxes of \$6694 per person. Investments in reducing poverty will result in a better use of the productive potential of the labour force and would ensue in substantial benefits for the economy and more specific for the government revenues.

### **Unemployment allowances**

The methodology used to approach this cost estimate, relies on the probability of being unemployed after obtaining a certain educational level. To define a proxy on the chances of getting a degree if a child grew up in poverty, we used the findings of Gezinsbond (2010) and Onderwijs Vlaanderen (2019) to determine as a proxy to determine how many of the Pelicano children will have a low, average or high education level if they wouldn't be lifted out of poverty. They found out that only 1 out of 4 children of a low-educated mother, continue with their higher education compared to 4 in 5 children growing up with a highly educated mother. According to Onderwijs Vlaanderen (2019), children of a mother with a low literacy level, have a 20% higher chance of leaving school early.

To determine the cost of unemployment allowances related to poverty, we compare the situation where the children grow up in poverty (thus are less likely to obtain a degree), with the average education level in Belgium (OECD, 2019)

Table 12 : Share of 25-34 years old with highest attainment.

Education level	Average in Belgium
Low	14%
Middle	38%
High	47%

As reported by Statbel (2019), the unemployment rate is strongly dependent on the education level. The unemployment rate for a low educated individual is 4 times higher than a high educated individual.

Table 13 : Education level linked to poverty in Belgium.

Education level		4th quarter 2019
Low	Employment rate	35,9%
	Unemployment rate	11,8%
Middle	Employment rate	67,5%
	Unemployment rate	5,4%
High	Employment rate	83,7%
	Unemployment rate	2,9%

Source: Statbel.fgov

A child who grows up in poverty will thus, on average, have more chances to be unemployed than the average child in Belgium as they have a higher education level.

As demonstrated above, eradicating poverty increases the tax revenues. On the other hand, it also decreases the government transfers in the form of unemployment allowances. But it is a difficult exercise to provide an accurate estimate of this cost as not all unemployment allowances are directed to those living in poverty. We opted to include this cost because the project will likely have an impact on it.

People are defined as unemployed if they meet the three following conditions; having no job, be available and looking for a job. Thus, it doesn't take into account discouraged workers, who have given up the search for a job. In table we calculated the cost of unemployment allowances associated with poverty. In the literature review and methodology, we already discussed our approach to calculate this cost. Childhood poverty increases the chance of school dropouts and it is less likely that they continue studying after secondary education.

Without the Pelicano project, 2000 children would grow up in poverty which would give the following distribution of educational attainment;

- 34% or 680 of the 2000 children wouldn't finish secondary education
- 41% or 820 of the 2000 children would finish secondary education
- 25% or 500 of the 2000 children would obtain a higher degree

To determine how many of them would be unemployed in a particular year, we apply the unemployment rates linked to the specific education level. So, of the 680 who would be low educated, on average 11,8% of them would be unemployed and thus receive an unemployment allowance.

Table 14 : Cost of unemployment associated with poverty.

Unemployment allowance					
Unemployment rate	Low education level		11.80%		
	Middle education level		5.40%		
	High education level		2.90%		
Educational attainment				<b>Growing up in poverty</b>	<b>Average in Belgium</b>
	Low		34%	680	14%
	Middle		41%	820	39%
	High		25%	500	47%
Population		2000			
Unemployment allowance		15,948.00 €			
<b>Total yearly cost</b>				<b>2,217,090.96 €</b>	<b>1,633,394.16 €</b>
<b>Difference</b>		<b>583,696.80 €</b>			
<b>Difference/child</b>		<b>291.85 €</b>			

This result implies that on 2000 children, the government can yearly save almost €600.000 because the children of the project will have a greater chance of obtaining a higher educational level, which entails in a lower unemployment rate and thus lower unemployment allowances.

### **Intergenerational cost of poverty**

We use the same approach as Laurie (2008) to determine the intergenerational cost of poverty. As discussed in the literature review, it is estimated that in Canada 20-25% of the children inherit the economic status of their parents. An American study even indicated that 42 percent of children born to parents in the lowest income quintile remain in the bottom as adults and another 23 percent rise only to the second quintile. But as we want to be conservative in estimating this cost, we opted to use the lower bound of 20%. Meaning that of all the children of the children currently part of the Pelicano project, 20% will also be likely to live in poverty when they are adults. To calculate this cost, the following question is asked: "What is the extra income and tax revenue generated by these 20% if they were in fact able to escape poverty when they are adults?". The average income of those living in poverty will thus be raised to the average income of the second quintile to see the increase in income and tax revenue. We assumed that every Pelicano child will on average have one child.

We estimated the intergenerational cost of poverty by using the intergenerational mobility rate -20%- stated in the study by Laurie (2008). If we apply this on the Pelicano project, this would imply that of the next generation of these 2000 children, 400 of them would live in poverty as an adult.

Next, to calculate the cost, the average income of a poor family is raised to the average income of the 2nd quintile. The average income is equal to the poverty threshold which, of course, depends on the constitution of the household. We based the income on a household consisting of a single person as the income of the 2nd quintile is based on a single income.

Table 15 : Intergenerational cost of poverty.

Intergenerational cost of poverty			
Children living in poverty in Belgium		2000	
intergenerational mobility rate		20%	
estimated number of children living in poverty when they are adults		400	
	Average Income	After taxes	Taxes
Average income of households living in poverty	19,200.00 €	13,508.00 €	5,692.00 €
Income 2nd quintile (80% earns more)	30,024.00 €	19,670.00 €	10,354.00 €
<b>Difference</b>	<b>10,824.00 €</b>	<b>6,162.00 €</b>	<b>4,662.00 €</b>
<b>Intergenerational cost of poverty</b>	<b>4,329,600.00 €</b>		<b>1,864,800.00 €</b>

This table can be interpreted as follows; children who fail to escape poverty in adulthood earn on average €10 824 less than in the case they would be able to outgrow poverty and earn the income of the second quintile. Moreover, they pay on average yearly €4662 less in income taxes each year. As stated earlier, this is probably an underestimation of the costs. First of all, we used the lower bound of the intergenerational mobility rate. Research done in America indicated that the rate is much higher. Secondly, of these 20% some of them will be able to earn an income higher than the 2nd quintile. The intergenerational cost from the government's point of view is thus the lower income taxes.

It should be noted that the intergenerational cost in terms of the Pelicano project a cost is on the very long term. It applies on the children of the children who are currently part of the organization. If we use these findings in the context of the Pelicano project, this means that of 2000 children who would grow up in poverty later without Pelicano, 400 of them will likely live in poverty in adulthood. Since, academic evidence suggests that this probability could be higher, we decided to follow the findings of Vaalavuo (2015) who studied the poverty dynamics in Europe and published her findings at the Publications Office of the European Union. She discovered that 35% of children in Belgium at risk of poverty will persistently stay poor. Hence, we chose this percentage to build our scenario analysis as presented in the assumption section. Combatting poverty is a long-term mission, from which benefits are only reaped later in time. Nevertheless, It makes sense to include those calculations in our CBA because these are real costs that we will have to face in the future if infant poverty is not tackled.

### ***Cost of housing***

The cost of social housing is certainly related with the poverty level. Alleviating poverty would put less burden on government spending on social housing. However, we decided not to include this cost in the estimation of the total social impact of the project. The goal of the project is to determine what the impact is when 2000 children are permanently lifted out of poverty indicating that the government would not need to provide affordable housing to them. But bearing in mind that there are more than 150 000 people on the waiting list, this will not have a direct impact on the cost of housing for the government. Thus, on the level of the project, the micro-level, this will not have a direct impact.

### ***Cost for Pelicano to finance a child***

The total cost to finance Pelicano children has been retrieved from Pelicano's website. In 2018, the total cost to finance 1055 children was € 2.293.000<sup>21</sup> which yields a total direct cost per child of € 2.173,46. This number has then been used to evaluate the direct cost of the total children currently present in the foundation. The indirect costs include all overheads Pelicano needs to operate as an association. The data for those costs were found in Pelicano's income statement and accounts for €954.357 in 2018. Hence, by dividing this figure with the total number of children at that time (1055 children) an indirect cost of € 908,91 per child each year has been used in the analysis.

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<sup>21</sup> Retrieved from Pelicano's website : <https://www.pelicano.be/nl/resultaten/>

### 04.2.2 Social Discount Rate (SDR)

One of the most important hurdles in evaluating the impact of a social economic program is the determination of a discount rate. The main problem arises from the time horizon (typically long for public and environmental projects) and the uncertainty of future cash flows. Nevertheless, typical federal budgets or regional development projects adopt a cost-benefit approach to assess their investments decisions by discounting future cash flows using a social discount rate (SDR) (Rambaud & Torrecillas, 2005; Armitage, 2017; Freeman et al., 2018).

Defining a methodology to determine a SDR is inherently a normative exercise. If the economy was in perfect equilibrium (perfect efficiency where prices reflect all available public and private information), the choice of a discount rate would be uncontroversial. In this particular universe, there would only be perfectly competitive markets with no information asymmetries, no transaction costs, no taxes and all individuals could lend or borrow at the same interest rate (Moore and Vining, 2018).

In this context, rational people (who take decisions based on maximizing self-utility) would equate their "marginal rate of time preference" (MRTP), which is the rate at which they would be willing to trade current consumptions for future ones with the market interest rate. Every firm would then invest until its marginal return on investment (MROI) would equal this MRTP which would also equal the SDR.

However, real economies are far more complex and are subjected to taxes, transaction costs, information asymmetries and public goods. In this universe, the choice of a SDR is not obvious. However, if a government intervention reduces present consumptions to increase future ones, the SDR should reflect the rate at which "society" would be willing to engage in this trade. Therefore, the two main core building blocks defining SDR Theory are:

**Social Rate of Time Preference (SRTP) :** this interest rate measures the society's willingness to postpone current private consumption for future consumption. An indicator of this SRTP could be the earning rate on individual's savings.

**Social Opportunity Cost of Capital (SOC) :** rate based on an asset-pricing model to estimate the expected rate of return from a public sector project. This can be carried out by comparing public projects against private sector projects considered having similar risk characteristics (Creedy and Passi, 2018).

These two discount rates provide a low- and high-bound proxy for the SRTP and the SOC respectively to determine the SDR. To measure the SRTP, the rate of return on government T-bills is often taken as an approximation, and is defined as:

$$\text{SRTP} \approx \text{rate on Government T-bills} - \text{inflation expectations}$$

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<sup>22</sup> Retrieved from the Belgian national bank's website : <https://stat.nbb/Index.aspx?DataSetCode=IROLOBE2>

This rate attempts to reflect the rate at which society refrains itself from present consumption (i.e., saving). It is a lower bound for SDR and suggests a relatively low discount rate (risk free T-bills minus inflation). Since the Belgian government bond yields are relatively low (even negative in the short term), inflation expectations are omitted.

For the 15 years impact of the Pelicano social project, the 15 years government T-bills of 0,37% is used (as of 10/06/2020). The impact over the lifetime of one child covers a time period of 60 years. Therefore, the 30 years government T-bills (the longest possible risk-free rate in Belgium) of 0,78% is used as a lower bound for this longer time period.

For the social opportunity cost of capital (SOC), the approach used is taking the view of public projects which future cash flows should be discounted with a reference rate of return that could be required in order to invest in the next best alternative project. This alternative is taken from a private sector project displaying similar risk features as the public project considered. In other words, private sector rates of return are usually considered to be the relevant measure of opportunity cost. In our case, we considered an estimate of 3% for a higher bound, following the recommendation of Florio and Sirtori (2013), who studied the value of social discount rates in European countries.

Finally, for the sake of simplicity, we will maintain a constant discount rate and not consider a decreasing discount rate approach to discount our future cashflows after 30 years. Nevertheless, a large body of literature emphasize the importance of considering this method as well (Gollier et al., 2008). Therefore, our estimates might be more conservatives in this regard.

### **04.2.3 Limitations and biases**

The cost-benefit model presented in this report, relies on a series of assumptions (see assumptions in section 1.4.2.) which might limit the scope of this analysis. The study universe has been limited to the most direct stakeholders impacted by Pelicano's social program (the children, the government and Pelicano itself) although many other third parties should be considered such as companies, other NGOs in partnership with Pelicano foundation, schools, hospitals, etc.

Because poverty is a multidimensional issue which interacts with a lot of other variables, estimating the costs associated with poverty is a highly imprecise exercise. It is almost impossible to isolate the effect poverty has on someone's life. For example, eradicating poverty can have substantial effects on a person's well-being which can then lead to an increased life expectancy. This in turn could generate higher public spending on pensions if people live longer. Those causes and effects dynamics are not included in our analysis.

Moreover, many intangible costs were excluded from the analysis such as the impact of poverty on social cohesion, happiness or feelings of safety. The cost of a highly stratified society is a societal cost that is more difficult to quantify, although not less important. For example, a highly stratified society as a result of poverty can induce increased criminality. This also affects the wealthier people who feel threatened and spend resources on security-related items such as alarm systems or home insurance. These costs are also not captured in our estimations but are side-effects of poverty.

Finally, our literature review is mostly focused on a macro-level. Most studies estimate the cost of poverty for the society as a whole, which means that the benefits of lifting people out of poverty are calculated assuming that everyone could get out of poverty. However, our study focuses on lifting a sample of children out of poverty. Our study is thus more focused on a micro-level, meaning that some findings in the academic literature were adapted to use them in our study (e.g., the opportunity cost).

## 05. Results

This section is divided in three parts, each answering a given empirical question as explained in the methodology in section 4.

### 05.1 Overview of total cost savings for the government

The first empirical question answered in this analysis consists of determining the potential cost savings the government could gain by eradicating completely infant poverty for 2000 children in a year. Answering this question is the starting point of the cost-benefit analysis conducted later in this research.

To do so, we first gathered all available information about the different costs associated with infant poverty (see costs estimates in section 4.2.1). Based on those estimates, we then estimated the total yearly costs by summing all of them as shown in Table 16.

Table 16 : Overview of costs savings for the government

Cost item	Per person	2000 children
Opportunity cost		
<i>VAT contribution</i>	312,57 €	625.136,39 €
<i>Social security contribution</i>	2.957,55 €	5.915.097,36 €
<i>tax on income</i>	8.000,72 €	16.001.445,51 €
Cost of health	892,89 €	1.785.784,00 €
Cost of crime	51,51 €	103,018.18 €
Unemployment allowances	291,85 €	583.696,80 €
Intergenerational cost	932,40 €	1.864.800,00 €
<b>Total potential savings</b>	<b>13.439,49 €</b>	<b>26.878.978,24 €</b>

This first empirical result suggests that the government could potentially save up to € 26.878.978,24 in a year by dealing with infant poverty for 2000 children. Nevertheless, this first proxy should be interpreted cautiously as many assumptions had to be made to reach this figure (see assumptions in section 4.1.2.). Moreover, the moment in time at which those costs occur differs and the 2000 children currently enrolled at Pelicano don't have all the same age.

For example, the intergenerational cost will occur only later in adulthood and the same applies for the opportunity cost in VAT, SS and IT, while the health cost could also occur during childhood. Hence, the total amount of potential yearly costs savings is different each year and is not the simple addition presented in table 16. Moreover, the discount rate at which we analyse each of these costs can have a significant impact on the total value of those estimates through time (especially when a cost appears later in life). Hence, this first proxy is overestimating the potential cost savings in a year as most benefits of investing in poverty only appear later in the life of a child. This is the reason why, the cost-benefit analysis in the next subsection will go one step further and precisely identify the moment at which those costs could occur every year to evaluate the total impact of Pelicano’s social program on the society as a whole but also on the government, the children and Pelicano itself.

## 05.2. Impact of Pelicano project on one child

This section investigates the total impact of Pelicano’s social project on one child until she/he reaches retirement (from 6 years old until 65 years old). By following the model developed in the methodology section 4.1.1., we could compute the empirical results displayed in table 17. The estimated total impact of Pelicano on society, including all stakeholders in our study universe, for one child and during its whole active life is on average € 538.013. This figure is the net present value of all the costs and benefits of getting one child out of poverty thanks to Pelicano’s social project. Thus, it would create € 538.013 of added value for the whole society. Moreover, we determined that the total payback period for which the total negative cash flows would be completely reimbursed by the society would be 24 years. This means that the effect of Pelicano’s project will have a positive impact on the society only in 24 years after a child of 6 years old enters the social program.

When we take a look at the stakeholders participating or benefiting from Pelicano’s social project (with Pelicano in table 17), we can see that the total value created averaged at € 961.331. In other words, the total net present value of all the costs to finance a child with the Pelicano project and the benefits a child will create to the society though its future spending (based on future net income) would almost be €1million. If we consider the children who will not take part in Pelicano’s social program we can see the added value is much lower, creating the positive added value for society explained earlier. However, we should be careful when interpreting absolute measures as not all costs from all stakeholders in the society were included in this study.

Table 17 : Empirical results of the cost-benefit analysis from Pelicano’s social project for one child.

*This table presents the summary of the empirical results from the cost-benefit analysis (CBA) for all stakeholders during the whole active life of one child (until 65 years old) as explained in the methodology in section 4.1.1. The first column refers to the valuation of the impact with Pelicano, without and the total impact, which is the difference between the two precedents. The second column shows the lower bound (Min) CBA for all stakeholders as presented in Table 3 , the third column shows the maximum (Max) and the fourth, the average of the Min and Max.*

	Min	Max	Average
With Pelicano	€ 570.863	€ 1.351.799	€ 961.331
Without Pelicano	€ 271.236	€ 575.399	€ 423.318
Total Impact	€ 299.627	€ 776.399	€ 538.013

When we look to the impact of Pelicano’s social program of each stakeholder separately in table 18, we observe that the total contribution of Pelicano to finance one single child until he/she becomes fully independent and start working is on average € 43.471. Moreover, the added value of a child joining Pelicano’s program compared to a child who would stay in poverty is on average € 262.219 in net income (see table 9 for the average of child contribution). We can also look at this amount as an opportunity cost for the society in net income for not investing in a child using Pelicano’s social program.

Table 18 : Empirical results of the cost-benefit analysis from Pelicano’s social project per stakeholder for one child.

*This table summarizes the empirical results of the cost-benefit analysis (CBA) of each stakeholder for one child during its whole active life (until 65 years old) (see methodology section 4.1.1). The first column refers to the impact of Pelicano’s social program on each stakeholder, the second column shows the lower bond of the cost-benefit analysis (CBA), the third column the maximum of the CBA and the fourth column the average.*

	Min	Max	Average
Child contribution	€ 152.728	€ 371.710	€ 262.219
Impact of Pelicano	-€ 39.466	-€ 47.477	-€ 43.471
Impact on Government	€ 186.365	€ 452.167	€ 319.266

Finally, when we look at the impact Pelicano’s social program has on the government, we can see that the government could gain on average up to € 319.266 in cost savings (see table 18), due to the eradication of infant poverty and in added expected VAT, social security contribution (SS) and income taxes (IT). This figure mainly accounts for the total opportunity cost in VAT, social security and income taxes for the government which reaches on average €243.505 as showed in table 19 for one single child (calculated as the difference between the sum of VAT, SS, IT with and without Pelicano, more details are provided in the methodology section 1.4.1). Hence, we deduced from those figures that the average net present value of the costs saved on poverty associated with health, crime, unemployment allowances and intergenerational costs for the government on one single child is €75.761 (the difference between the two precedent calculations). Finally, if we assume that the government would use Pelicano’s social program and start investing the same amount of money with an equal operational approach, we can easily estimate that the impact on the government could reach € 275.794 of added value. To do so, we simply added to the average “impact on government” calculated in table 10, the net present value of Pelicano’s direct and indirect costs (impact of Pelicano in table 18).

Table 19 : Costs details by the government on one child

*This table presents the summary of the empirical results of a cost-benefit analysis for the government during the whole active life of one child (until 65 years old). The first column refers to the impact of Pelicano on the government's costs saved on poverty, the opportunity cost and the government total impact using Pelicano's total costs to finance one child. The second column shows the lower bound (Min) of the valuation, the third column shows the maximum (Max) and the fourth, the average of the Min and Max.*

	Min	Max	Average
cost saved on poverty	€ 46.746	€ 104.776	€ 75.761
Opportunity cost in SS, VAT, IT	€ 139.619	€ 347.391	€ 243.505
Government social program	€ 146.899	€ 404.689	€ 275.794

### 05.3. Total impact of Pelicano

This section analyses the total impact of Pelicano's social project over a period of 15 years (2020-2035) taking into account the in- and outflow of children and the target to reach 2000 children by 2025. The empirical results displayed in table 20 emphasize an important economic impact of Pelicano's program on society of € 26.827.898. In other words, the added value of all Pelicano's children joining the social program on the overall society could reach on average this amount over the next 15 years. However, we should interpret this number cautiously as few simplifications and assumptions had to be made in the context of this research (see Assumptions in section). When we look at all the stakeholders participating in Pelicano's social program, they could potentially create € 175.559.448 over the next 15 years. This important figure is caused by the future expected net income that Pelicano children could gain when they reach adulthood. Here again, a careful interpretation of those absolute figures is required since many third parties' costs and benefits such as schools, hospitals, other NGOs in partnerships with Pelicano had to be excluded from this analysis. Nevertheless, the relative impact of € 26.827.898 from Pelicano's social program provide a good proxy to estimate the potential impact it could generate to our society.

Table 20 : Empirical results of the CBA from Pelicano's social project for the next 15 years (2020-2035).

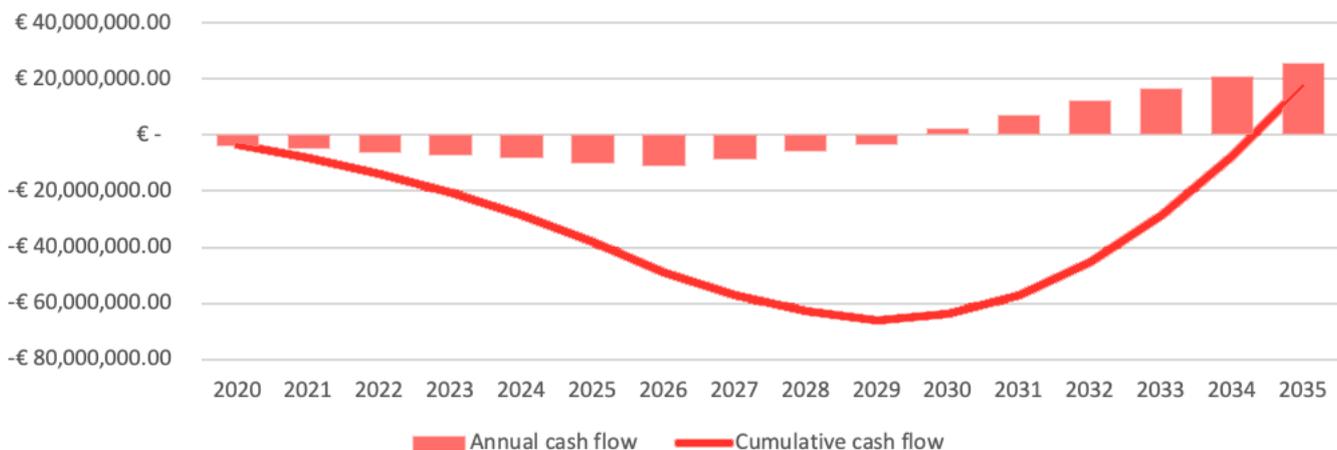
*This table presents the summary of the empirical results of the CBA model for all stakeholders for the next 15 years taking into account the age distribution of the children currently enrolled in the social program with the target of reaching 2000 children by 2025 (for more details see methodology in section 4.1.1). The first column refers to the impact with Pelicano, without and the total impact which is the difference between the two precedents. The second column shows the lower bound (Min) of the CBA for each stakeholder as presented in Table12, the third column shows the maximum (Max) and the fourth, the average of the Min and Max. This table presents the summary of the empirical results of the CBA model for all stakeholders for the next 15 years taking into account the age distribution of the children currently enrolled in the social program with the target of reaching 2000 children by 2025 (for more details see methodology in section 4.1.1). The first column refers to the impact with Pelicano, without and the total impact which is the difference between the two precedents. The second column shows the lower bound (Min) of the CBA for each stakeholder as presented in Table12, the third column shows the maximum (Max) and the fourth, the average of the Min and Max.*

	Min	Max	Average
With Pelicano	€ 153.029.093	€ 198.089.802	€ 175.559.448
Without Pelicano	€ 135.222.792	€ 162.240.309	€ 148.731.550
Total impact	€ 17.806.302	€ 35.849.493	€ 26.827.898

Additionally, our results suggest that the total payback period for Pelicano’s program will reach 15 years as displayed in figure 9. In the beginning of the year 2035, all stakeholders impacted by Pelicano’s social program will start to see the positive impact Pelicano’s social program has on society and they will be completely reimbursed for all the costs incurred to support the children. In figure 9, the cumulative cash flow for the year 2034 is €- 538.618,46 (difficult to identify on the graph). Hence, the positive cumulative cash flow will appear only during the year 2035.

Absolute positive cash flows are appearing from the year 2030 and it will take five years for those cash flows to fully reimburse all the negative cash flows endured before the year 2030. We also notice that a maximum negative cumulative cash flow of € 63.968.695,95 is reached in 2029. The year with the most important negative cash flow of € 10.596.522,44 will be reached in 2026. Nevertheless, those results should be interpreted cautiously since an assumption had to be made (given the availability of data) on the age distribution of Pelicano children (see assumptions in section 4.1.2.). However, those estimates provide a good proxy of the possible future cash flows Pelicano could induce for the main stakeholders impacted by the social program in our society.

Figure 9 : Pelicano’s total cash flows impact on society for the next 15 years (2020-2035)



Finally, Pelicano’s social program impact on each stakeholder is analyzed in Table 21. The total average investment for Pelicano over the next 15 years to finance all its current children and new children (due to the expected children turnover as explained in methodology in section 4.1.2.), is estimated at -€ 83.082.545. When considering the average total added contribution of all current Pelicano children over the next 15 years on Belgian society, we estimated that € 43.222.065 can be created as added net income. The total impact of Pelicano’s social program on the Belgian government yields € 64.422.977 in cost savings (see table 19), due to the eradication of infant poverty and in added expected VAT, social security contribution (SS) and income taxes (IT).

Table 21 : Empirical results of the CBA from Pelicano’s social project for the next 15 years per stakeholders.

*This table summarizes the empirical results of the CBA model of each stakeholder and for all children currently enrolled in Pelicano’s social program during the next 15 years (see Methodology section 4.1.1). The first column refers to the impact of Pelicano’s social program on each stakeholder, the second column shows the lower bound of the cost-benefit analysis (CBA), the third column the maximum of the CBA and the fourth column the average*

	Min	Max	Average
<b>Children contribution</b>	€ 33.910.944	€ 52.533.186	€ 43.222.065
<b>Impact of Pelicano</b>	-€ 74.717.908	-€ 91.447.181	-€ 83.082.545
<b>Impact on Government</b>	€ 54.082.464	€ 74.763.489	€ 64.422.977

Table 22 explains the details of all the possible costs effects Pelicano’s foundation has on the government over the next 15 years. A total positive impact on the government of € 64.422.977 in table 12 has been estimated, which is the sum of the opportunity cost and all the costs saved on poverty presented in table 22. The total opportunity cost in social security, VAT and income taxes that the government could gain thanks to Pelicano’s social project is € 28.468.157,21 and the cost saved on poverty is € 35.954.819,59 over the next 15 years. Hence, the impact of Pelicano’s social project on the government is substantial.

Finally, if we assume that the government would use Pelicano’s social program and invest in the same children over the next 15 years, its total impact reaches a negative amount of -€ 18.299.649,56 (the calculation consists of simply adding the total impact of Pelicano to the impact on Government in Table 21). This result is caused by the current children demography at Pelicano’s foundation. Not all children will leave Pelicano foundation in the next 15 years and many new children will join the program to reach 2000 children by 2025. Hence, this result is understandable since a lot of investments still need to be done before future positive benefits arises (when the children will join the workforce later in their life). It’s important to acknowledge that we didn’t considered in this calculation the costs that are already incurred before 2020. Pelicano already invested a considerable amount since the start to help these children but this is not included in our estimate of the total impact in the coming 15 years.

Table 22 : Cost details by the government for all Pelicano’s children.

*This table presents the summary of the empirical results of a cost analysis covered by the government for all children during the next 15 year (2020-2035). The first column refers to the government total impact using Pelicano’s total costs to finance all children, the opportunity costs and the government’s costs saved on poverty and the opportunity cost. The second column shows the lower bound (Min) of the valuation, the third column shows the maximum (Max) and the fourth, the average of the Min and Max.*

	Min	Max	Average
<b>Government social program</b>	-€ 16.683.692,28	-€ 20.635.443,70	-€ 18.659.567,99
<b>Opportunity cost in SS, VAT, IT</b>	€ 22.134.770,41	€ 34.801.544,01	€ 28.468.157,21
<b>Cost saved on poverty</b>	€ 31.947.694,04	€ 39.961.945,15	€ 35.954.819,59

## 05.4 Conclusions

Although childhood poverty has witnessed an unprecedented interest from policy makers over the last decade, it remains a widespread issue worldwide. In Belgium, successive federal and regional governments introduced many national plans over the years to combat childhood poverty without success. The percentage of children at risk of poverty and social exclusion remained almost constant in Belgium (between 2010 and 2018).

This alarming observation bears far-reaching consequences and constitute a multidimensional problem. Poverty has a devastating impact on children's life, as they are more likely to; grow up with poor mental and physical health, underachieve at school, be involved in criminal activities or face higher difficulties in finding a job. Hence, one particularity of infant poverty is that it can persist through time and induce a vicious circle from an individual perspective. It causes harm to those who experience it, but moreover, the society as a whole is affected by the existence of poverty

In this context, Pelicano's social purpose to fight infant poverty is a noble cause. However, there is at this moment no information on the potential impact the foundation could have on Belgian society. Hence, the purpose of this research paper was to investigate the total social and economic impact of Pelicano on the society but also on the government, the children and Pelicano itself.

Our study reports several interesting results. First, we found that at a macro-level, the government could potentially save up to € 13.439,49 a year to lift one person out of poverty in Belgium. This estimate has been determined based on five major costs associated with infant poverty: the opportunity cost in VAT contribution, in social security contribution and in income taxes; the cost of health associated with poverty, the cost of crime, the intergenerational cost and unemployment allowances.

Based on those cost estimates and expected future benefits, we discovered that the total impact of Pelicano of lifting one single child out of poverty reaches € 538.013. This means that Pelicano foundation creates € 538.013 of added value to our society by lifting one single child out of poverty. Moreover, we found that Pelicano has a positive impact on the government of € 319.266 for every single child joining the social program.

Finally, we scaled up this second analysis to determine the total impact Pelicano has on society by taking into account the in- and outflow of children in the social program over the next 15 years with the goal to reach 2000 children by 2025 (1774 children are currently enrolled in the social program). We found evidence that Pelicano could create € 26.827.898 over the next 15 years of added value to our society. Additionally, we observed a positive impact on the government of € 64.422.977 over the next 15 years.

Nevertheless, we should interpret those results cautiously and put them into perspective. First of all, many assumptions and simplifications had to be made to estimate future costs and benefits for each child. Moreover, intangible costs were excluded from this analysis such as emotional and psychological harm. However, by quantifying the most tangible economic costs of poverty, our result clearly shows that the benefits of alleviating poverty outweigh the costs. Therefore, from an economic perspective, we could argue that it is much more profitable to tackle childhood poverty than continue to pay for its consequences.

Finally, our research has revealed key takeaways and future thoughts for subsequent researches which could complete this analysis. First, the scope of this project could be amply widened by building a stronger database. One important limitation of this project was the availability of data to include as much stakeholders as possible to investigate the total impact Pelicano has on society. Therefore, a database including potential costs and benefits of other NGOs partnering with Pelicano, hospitals, schools or OCMWs/CPAs could improve this analysis. Secondly, there is at this moment no information regarding the current budget the government has allocated to fight infant poverty. In this context, investigating this matter could bring even more precise estimates to determine the impact of social economic programs fighting infant poverty in Belgium. Third, a large body of literature has been developed to study infant poverty in the world. Nevertheless, lots of work is still needed to understand infant poverty dynamics in Belgium with its root causes. Additionally an integrated and multi-faced approach should be developed to overcome this challenge in Belgium.



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## 06. Evaluation of the program

As mentioned in the introduction of this paper there are several actors who fight everyday against poverty and its multiple consequences. Doing some research about the role they play in this fight and their methodology; there is a program in Spain that captivated our interest, La Caixa Pro Infancia.

La Caixa is a Spanish bank which through a foundation is one of the most active players in helping society in Spain. This program is focused on helping children and their family to get opportunities to get out of poverty and get integrated in society (see Appendix I). La Caixa benefits of its very extended network of different programs which some, to give an example, focus on the integration in the job market for disabled individuals, on the research to cure diseases and many more.

The reason why we decided to look deeper into this program was because of the multiple similarities with the Pelicano Project. They offer support to children and families through goods and services but never money. The way they interact with the stakeholders of the program is also very similar to the way they do it in Pelicano, La Caixa relies on its extensive network to help without having direct contact with them. La Caixa is also aware of the different problematics of poverty and as Pelicano, from a very early staged, the foundation was interested in knowing the impact of the program to better understand the situation they're facing, their strengths and more importantly their weaknesses.

Although the goal and the tools they use are similar to the ones from Pelicano there are a few differences. First of all, both are local players in EU countries, however the poverty rate and situation in Spain is significantly more severe than it is in Belgium. In addition to this, the population of Spain is also larger than the one in Belgium, which means that the amount of people requiring help is noticeably bigger but also that a centralization of the program is almost impossible.

Finally, and partly because of the two reasons just mentioned; the size of the CPI program is of a bigger scale than the Pelicano Foundation. The availability of larger resources together with the strong network of social programs managed by La Caixa in Spain, allow them to set more ambitious targets. Nevertheless, these are not bad news, these facts mean that there are some things that can be implemented in the Pelicano program in order to improve it and to support its continuous scalation.

### 06.1 The take aways of the case

As we mentioned before, there are many interesting things that we found in the program. To start with, there is the same mindset as in Pelicano, no cash help; the help is provided through goods and services but never in the form of money. Furthermore, there is a gap between the management of the program and the stakeholders, meaning that there is not a close link between Caixa and the kids, this was really easy for Caixa to do thanks to its extensive network of social programs and subprograms. This network exists in Pelicano as well, and as it is less complex, it allows to have a more controlled and a closer relation with third parties and it improves the nexus between the foundation and the children.

Secondly, as in Pelicano, there is a clear goal in Caixa of wanting to evaluate the program and its impact on society. In order to do so they partner up with around 25 universities across the Spanish territory. Pelicano is taking a first step in doing the same thing with this collaboration with the Vlerick Business School to analyze the impact of the program on society and the importance of eradicating poverty.

In addition to all these indicators that not only show that many organizations internationally are fighting the problem in similar ways, we found that La Caixa was doing something really interesting that could be implemented in the Pelicano program, this is the evaluation of the program. The evaluation of the program is understood as an internal and external analysis of different indicators in order to have a better understanding of what are the strengths and weaknesses of the program, what are the things that need to be improved. Moreover, it gives an idea on how the program is perceived by the different actors of the program, meaning stakeholders, but also participants of the program. The final goal of this is to keep a constant improvement of the program and to not conform with the things that are being done today but try to prevent and tackle any new issue that can come in the coming years.

Furthermore, this evaluation of the program provides the foundation with very interesting information about the different participants of the program. This information shows the impact of the project on a micro- and a macro-level. Allowing them to have a very thorough understanding of the different areas where the project is having an impact.

## **06.2 Evaluating the Pelicano Program**

Being customer focused is something that we usually see in the description of many companies, in Pelicano Foundation this goes even further. Everything they do is for the children and because of that we don't understand the evaluation of the program as a way of evaluating how successful the children are, instead what we want to achieve with this evaluation overall, is a way of detecting weaknesses and other needs that the program is not satisfying now. Doing this we want to establish a continuous improvement of the program; poverty is a very complex problem where different areas and levels are discussed. Hence, to have a full understanding of it is certainly not easy. By constantly monitoring the program we want Pelicano to achieve this knowledge step by step and detect and develop new ways of tackling infant poverty.

In order to do so, it is important to understand that in this stage the third parties will play an important role because they will be the people responsible of conducting the evaluation as they're the ones in contact with the kids. Since they're also part of the program they're in a perfect position to detect this deprivation of basic needs. In addition, their professional experience and their knowledge about the center and the environment surrounding the kids provides them with a better understanding of the child's needs in order to provide recommendations.

The evaluation should proceed as follows, annually the third parties are requested to fill in a one-page form (Appendix III) where key indicators of well-being are described and see if the kids are satisfying these needs every year. In the case that some of these points are not positive there will be some requested recommendations that will try to standardize processes to make the help more efficient for the kids. We'd like to highlight that when we talk about well-being indicators (Appendix II) many of them have an intangible and emotional character, we don't try to pursue or detect those. We do understand that in order to do so, a very complex and thorough analysis needs to be done and that will be reserved to professional psychologists. The needs that must be satisfied are the ones related to alimentation, hygiene and education.

This evaluation will bring much more than improvements, it will allow the children to have a better experience with the program. This yearly evaluation will enlighten some other important things. To begin with, it will generate some data about important needs of the children that will allow to cluster some profiles and extent the different solutions across geography or age. Secondly, this very same data will be very useful to attract and convince future investors and/or donors, this data will also show the progressive improvement of the Pelicano kids in terms of school absenteeism or simply basic living conditions that many of these children unfortunately can't enjoy. This means that Pelicano will have a view on the very micro-level of how they are improving these children's lives.

To give an example, many children who live in impoverished circumstances have difficulties to attend school simply because the adult responsible for this can't do it. Being able to cluster all children who have this same problem and live in the same area, Pelicano could provide a solution that allow them to attend school daily as any other kid. This shows an improvement in school absenteeism, which is strictly linked to academic success. So Pelicano is not only tackling the problem of the absenteeism, but it is increasing the probability that their children will achieve their goals.

Another example and very common problem that we found in children who live in poverty is obesity. Mainly due to an inadequate diet, many poor kids found themselves involved in this health problem at a very young age. Tackling this issue by making sure that every Pelicano kid has a proper alimentation will alleviate obesity. But as in the case of absenteeism the repercussion is bigger. Research shows that kids who suffer obesity problems are more likely to not attend school due to illnesses (An, 2017). So indirectly this is again linked to school absenteeism but also to healthcare costs for society.

These examples show how tackling very simple things can achieve very important results in the long term and we strongly believe that this yearly evaluation of the program will help the foundation to have a better view and understanding of these issues and how to solve them.

Finally all this data will prove to be very useful for future evaluations of the impact of the program, following studies in the same direction that may be carried on again by Pelicano will have a more complete information and view about the program and the kids which will help them to obtain very accurate results of the analysis.



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## APPENDIX I

### ***La Caixa Pro Infancia, Case study (Spain)***

The program Caixa ProInfancia search the improvement of childhood and families living under poverty conditions and vulnerability in Spain through social and educational actions.

The main results of the evaluation point at a better empowerment of the participants, improvements in children academic development and inclusion, an increase in the family's well-being and some advances in a model to create social and educational actions.

The Strategy Europe 2020 plans to reduce the number of poverty by 20 million EU citizens by the year 2020. To measure poverty they use the AROPE index (People at risk of poverty or social exclusion). Having an income below 60% of the median of the income distribution, severe lacking of resources or living in houses with low occupancy rates are some of the indicators used to define this index.

There are some factors that have influence in poverty, precarious and discontinuous participation in the job market, long term unemployment, difficulty to access to a place to live in, multiple changes in the core of the family and null or rare impact of the social and family policies.

It is also noticeable that people, who are raised with economic difficulties in their childhood house or whose parents have a low education level, tend to have a higher rate of poverty rate.

Education is one of the mechanisms to create opportunities, allowing these kids to get out of the death spiral in which poverty condemn them to inherit the social exclusion and economic environment that their parents lived in.

Poverty's complexity ask for a multidisciplinary approach, but luckily there are several initiatives that face the problem in this way. (Zones d'Action Prioritaire en France, Education Actions Zones and Extended Schools in the United Kingdom)

### ***The program***

The Banking Foundation (Caixa d'Estalvis i Pensions de Barcelona, "la Caixa") started the Caixa Pro Infancia Program in the year 2007, working in the most populated territories in Spain (Barcelona, Bilbao, Gran Canaria, Madrid, Málaga, Murcia, Palma de Mallorca, Sevilla, Tenerife, Valencia y Zaragoza)

The program supports children between 0 and 16 years and their families to get out of the vulnerable situation caused by living in poverty. It does so by promoting equity improvement policies, social cohesion and equality of opportunities.

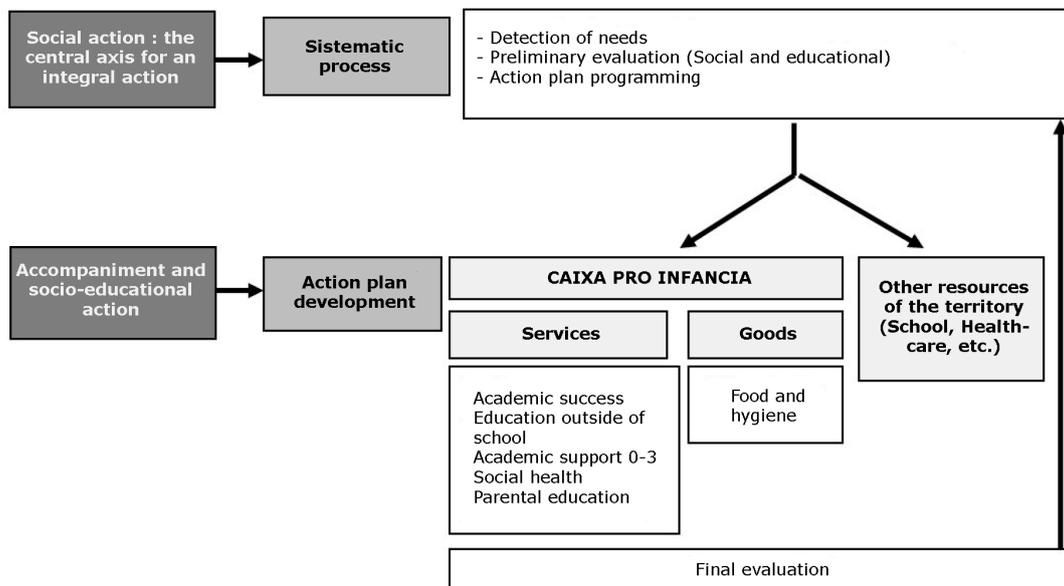
From 2007 to 2016 the program supported an average of 65.000 children and adolescents and 35.000 families. Their profile is as follows, 100% of the families lives in severe or relative poverty conditions, in 57% of the families the main breadwinner has at most basic studies, 42% are single parent families, the 62% of the parents are unemployed and the 25,6% don't receive any governmental allowance; 50% of the families are foreigners. In total, 50 million euros per year are invested in the program, from which 93% are for goods and services. In the 70% of the families, the difficulties to access basic resources and the poverty can be linked to other "social risk" factors like housing problems, low education levels, domestic violence, alcohol, gambling and drugs addiction, or parents with low education level.

The effects in children are psychologic insecurity, malnutrition, academic failure, violence, and addictions. For all these the program wants to assess a variety of needs (education, health, parental competences and work insertion)

During the first stage (2007-2010) the actions of the program were focused on provision of goods like school equipment, nutrition and infant hygiene, the buying of glasses and hearing aid; and services like academic support, playing time and psychotherapy help.

The second stage of the program was the collaboration with 25 universities to develop action models which led to the development of 4 documents. The first one a multidimensional social action plan where support actions individualized per child and family are developed. For these actions to be provided the plan highlights the important of the social network, being this a multidisciplinary network of independents that act in different fields.

Figura 1 : Action plan socio-educational activities of the program CPI.



Source: Research group PSITIC-URL, 2013a.

Besides the conceptual revision of the program; it's been organized group sessions with the different agents of the program, strengthening the local socio-educational action network in the territory. Also it has been designed a standardized plan to evaluate the program.

Far beyond the solid grounds of the program is necessary to achieved evidence that justify how the program is developing as its real impact. There are two main goals behind this : a) report to the people implicated in the program (donators, institutions, managers, entities, people enjoying the program and society) about the effectivity of the actions developed; and b) improve continuously the program.

Following the measures established in the CIPP (Stulebeam and Shikiel, 1985) it has been organized the evaluation. Taking into account, the environments to which are associated specific evaluation criteria. 2) a compound of indicators that specify those environments and allow them to gather the necessary information. 3) the sources of information; and 4) the agents taking part in the collection of data and its assessment.

In a nutshell, the evaluation of the CPI program is conceived as a continuous process of deliberation and learning, focused on the confirmation of the success of the targets set but also the identification of the improvable aspects of the program, like the understanding of the action processes that are more effective. This dynamic of action-investigation (Lewin, 1946) has an special relevance in the social and educational action plans thus there's no unrefutably evidence that confirm which is the best of all to act against the different needs that are detected. This way, the design of the program nurtures constantly of the results and the evaluation allowing it to improve and to realize its possibilities and limitations.

To this moment have been done different studies about the program that evaluate so many elements in the context, like inputs, process and results:

In 2011-12 have been done detailed evaluations about the needs and resources (publics and private) that look at childhood in poverty situation in every territory where it's implemented the program CaixaProinfancia. The analysis developed in this mapping has been complemented during the year 2014 with a study in the different districts and localities with a higher vulnerability due to poverty through socioeconomic indicators.

In addition during this period were evaluated the networks of the program CPI starting from data and deliberations collected as auto evaluations about the work developed in 2010-2011. The information was collected quantitative and qualitative questionnaires about the actions and networking work.

In 2013 a descriptive and prospective analysis was done to know the evolution and modifications of the program at its beginning in the year 2007 until 2012. It were analyzed 200.000 cases and a hundred of different variables from the data about the insertion and management of the program and it was done an statistical exploitation. From this moment has been maintained this evaluation on the incidence during every academic year until nowadays.

When starting the year 2012-13 it were evaluated some subprograms of academic support and psychotherapeutic help, analyzing data of representative evidences. This evaluations have been kept along the following years until today.

In parallel to these evaluations of the program, It have been done every year different audits of the management to follow up on the internal procedures of the program and its performance. These results can be checked in the page of Caixa Proinfancia.

(<http://www.observatorioporlapobrezacaixaproinfancia.org>).

The ultimate challenge planned from the program is the evaluation of the impact. Until now has been limited by two constraints: not having a base line established from the beginning of the program and the lack of access to comparison groups. There are some things that are necessarily taken into account, first of all the intangible and subjective character of multiple indicators that can support the impact of social and educational programs. Secondly, the fragility of most of the achievements in those fields that hardly can be considered as definitive, given the influence of the vulnerability and risk contexts. Third, the need to look in a very long term to be able to determinate the impact of the improvement in the poverty transmission circle, far beyond the identification of partial evidences in the achievement of personal processes.

## **Target**

The research introduced has two key targets:

- a) To know the impact perception from the different point of views of the people involved in the program, both actively and as stakeholders.
- b) To identify the main aspects of improvement for the program and its global character to be able to guide the decision making process.

## **Methodology**

It has been used a qualitative methodology in order to set out a first research exploratory of the perceptions and narratives that surround the program. In this qualitative stage we hope to be able to formulate some hypothesis about how and why the program is working, helping the people in charge of the program to better understand what is going on with its implementation (Rao y Woolcock, 2003). After this, we expect to complement this paper with the studies in order to enlarge the consistency of the result, thanks to the combination of methodologies (Bamberger, Rao and Woolcock).

## **Participants**

The participants of the study have been selected from each of the territories where the program is taking place, and making sure that they represent the different interest groups. 138 families, 99 entity professionals and 29 technical experts working in the public sector or regional leaders (Region's presidents and mayors).

It is important to have participants who: a) know the program or at least some of the subprograms included; b) have a trajectory of at least 3 years inside the program; c) for professionals, they should represent different profiles in terms of backgrounds, entities and public administrations.

### ***Processing and analyzing the information***

It is important to elaborate some forms to standardize the way this information was collected from the participants. 4 categories were defined that were also used to organize the posterior analysis. A) Results perceived from the program, and opinion about its design and process B) Level of knowledge of the program C) Weaknesses D) Opportunities. (This would be a variation of a SWOT analysis, to improve strategy and define competitive advantages of the program).

### ***Results***

Results perceived from the program, and opinion about its design and process

The families think that the help, both goods and services allow them to be alleviated economically that also provides calm in the family core. Some of the goods are specifically mentioned, academic equipment, food, hygiene products, glasses and hear aid. The allowances for academic equipment facilitate that the kids have the necessary material for school, same as their colleagues which avoids their exclusion. In addition to this, the possibility to participate in extracurricular activities and academic support lessons for free is highly valued by the families because they wouldn't be able to afford it otherwise. Quoting one of the mothers " I do prefer academic support classes or being able to send my son to a camp than the money. The money is bread for today and hunger for tomorrow\*"

\*This is an Spanish idiom used to express the short term character of something. (Literally: Pan para hoy, hambre para mañana)

Through out the subprogram Apoyo Educativo Familiar (Family Educational Support) the families have improved their communication and relationships with other family members, and have learned to cope with negative behavior and conflictive situations at home. A mother explain it as follows: " I didn't talk with my daughter, I yelled at her.. they help you not only to stablish some rules but the knowhow and the deliberation behind it, and you can see the results..."

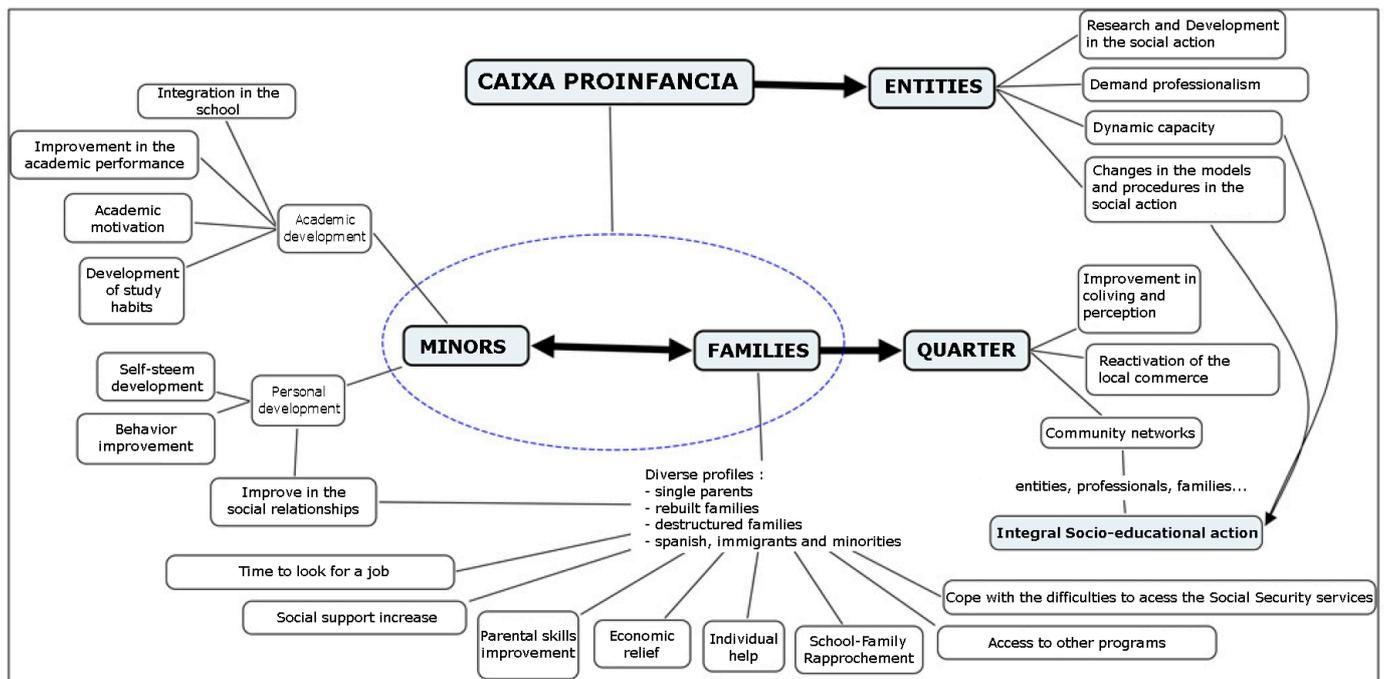
The families appreciate the fact that they have more time to look for a job and to look after some of their other responsibilities, knowing that their children are well thanks to the program.

Regarding the academic environment, the families noticed an improvement at school, specially in communication skills but also in the grades. These improvements are assessed through academic success indicators that are reported by the school.

They also see an improvement in behavior. Mainly they see that the children become more responsible and autonomous, acquiring studying habits that make easier the integration at school, in the words of one of the mothers: "I see that they stablish some routines in their schedules, organization (...) An everyday coordination. I think that what help them the most is that they are responsible and autonomous and capable of coping with their issues. They become more mature"

On a personal level , they recognize the improvement in the wellbeing and the self esteem of the children, and their relationships. Some of the families explain that the kids are in a better mood, that they have shown new interests and have learned to interact with people from different cultures. There is some kind of circular effect, the families perceive more opportunities for their children when they see them cope with situations that used to be impossible to overcome.

Figura 2 : Scheme of key results perceived by the program CPI.



**Source:** Research group PSITIC-URL, 2013a.

In the community environment there are also a few improvements in the daily life and the image of the neighborhood, due to a better integration between kids from different cultures, due to the kids are participating in different activities instead of just being on the street or even because it has an impact in the perception of the area. There is also an economic improvement since the families have to use the food checks in local and nearby shops.

To conclude, we have identified as one of the most relevant results the work in network with other agents in the territory: It has been promoted the development of a psycho-social-educational working network that allow to take global and integral actions, this enlarge the scope of the social intervention. These actions are the ones that support the empowerment of the families.

### ***Weaknesses and opportunities***

One of the weaknesses regarding the management of the program points at the high level of bureaucratization which can be overwhelming for the professionals and sometimes makes the families feel distrusted.

Regarding the people and technics that help in the program, the families see as a problem the lack of continuity of the professionals and the volunteers, specially in the subprograms. In this sense the professionals have developed some guidelines specific of each territory to ease the entering and addition of new professionals and have a clear idea of the problems and the best way of approaching some situations depending on the location of the cases.

### ***Conclusions***

We have to question ourselves about the impact of the program regarding the reduction of poverty, which is defined as the mission of the program CPI. To explain the economic effects of the program, the focus groups use words as "containment" of the problems of the crisis, economic "relief", "alleviation". This means that help is perceived as a solution to an immediate and concrete problem for a specific period of time, however it is not clear whether these helps will produce a long term impact in the families. Despite of the fact that there is an improvement in the daily life of the families there is also a feeling that they'll be always be able to get help from the program, in other words they don't manage to be completely autonomous.

To reduce poverty is necessary to modify some of the structural conditions of poverty, tackling the factors for social exclusion. The CPI program can contribute in this sense, by promoting a social and educational development of childhood and families. However it seems obvious that the program can't be the only solution and it needs to be complemented with other actions to achieve a real and long lasting change in the families. In this matter, the fact that the public administration had accepted the implication of a private player in the social help is a big advance, although there is now a risk that this one will delegate its functions.



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## APPENDIX II

### ***Evaluation of the programs, well-being indicators***

Physical needs : Alimentation, Temperature, Hygiene, Health, Sleep, exercise and playing

#### **Alimentation**

##### ***Satisfaction indicators***

- Sufficient alimentation, diverse, sequenced in time and adapted to age.

##### ***Deficiency indicators***

- Malnutrition or excess of food that can generate significant problems in the children health. Inadequate alimentation for the kid's age.

#### **Temperature**

##### ***Satisfaction indicators***

- Acceptable housing and clothing conditions

##### ***Deficiency indicators***

- Being cold in the residence, humidity, lack of shoes lack of clothing.

#### **Hygiene**

##### ***Satisfaction indicators***

- Personal hygiene, cleaning at home, in the food, the clothes and the environment.

##### ***Deficiency indicators***

- Dirtiness; polluted environment, infectious germs, parasites and mice

#### **Health**

##### ***Satisfaction indicators***

- Appropriate checks and vaccines.

##### ***Deficiency indicators***

- Lack of health checks, and no vaccination.

#### **Sleep**

##### ***Satisfaction indicators***

- Quiet and protected environment, sufficient for the kid's age. Adding naps in case of small kids.

##### ***Deficiency indicators***

- Insecurity: noise pollution, repeated interruptions, insufficient time, having no place or time for day rest.

## Exercise and playing

### **Satisfaction indicators**

· Freedom in the environment, spaces with toys and other kids, contact with natural elements (water, earth, plants, animals...); walks, trips, etc.

### **Deficiency indicators**

· Lack of space, lack of toys, inactivity and sedentary lifestyle.

## Safety

Protection against the environment conditions that are a risk for the physical integrity of the kid or the adolescent.

Protection against other people that can hurt the child.

Protection against the damage that the child or adolescent can do to himself.

### **Satisfaction indicators**

- Adequate security measures (sockets, detergents, tools, stairs, ladders...)
- Supervision; knowledge and control over the child relationships and the location where the kid is.
- Orientation and guidance; to teach the kid the basic security rules
- Availability; direct intervention of help and protection when the kid can be damaged or hurt by others or himself

### **Deficiency indicators**

· Domestic accidents. The kid have accidents or aggressions as consequence of the lack of supervision.

The kid is continuously involved in behaviors or risky relationships that the responsible adults ignore or misunderstand.

The kid is repeatedly the target of other's aggressions.

Rejection or delay in the provision of specialized help when the child shows self-destructive behavior or suicidal ideas.

## Emotional needs

Having safety, stable and affective relationships with adults that are meaningful.

Sensitivity and responsiveness to the kid's needs

Appropriate physical contact

Receiving affection and positive support

Continuity in the relationships with relatives and other significant adults

### **Satisfaction indicators**

· Unconditional affection (acceptation, disponibility, accessibility, adequate response to demands, and competence); intimate contact (touch, visual, linguistic, etc.); physical and verbal demonstrations of affect; support and appreciation of the achievements and positive aspects of the kid, control capability, protection capability, conflict resolution with inductive ethic, explanations, adequate demands to the age, consistent demands, adaptability in case of the kid rejects or protest the demand, playful interaction in the family with the parents and other family members.

### **Deficiency indicators**

- Refusal; lack, unavailability of time from the parents; inaccessibility, lack of physical and verbal affective demonstration; devaluation of the kid, no reaffirmation of the achievements, verbal aggressions, prevalence of negative messages, no perception, no interpretation, no response, inconsistent answer, lack of capability to control the child, lack of capability to protect the kid, authoritarianism.
- Breaks in the significant relations of the kid, threats of love withdrawal.

### **Progressive participation and autonomy**

#### **Satisfaction indicators**

The child participates in decisions about things that have an impact on him and can actively profit the benefits of his family, the school and the society.

#### **Deficiency indicators**

Not listening to the child, not count on him making him being dependent.

### **Respect to the process of psychosexual development**

#### **Satisfaction indicators**

Answer questions, protect against aggressions.

#### **Deficiency indicators**

Not listening to the child, not answering but punish the kid, trick him.

### **Protection against imaginary risks**

#### **Satisfaction indicators**

Listening, understanding and address the fears of the children (fear of abandonment, fraternal rivalry, fear of death); possibility of expressing the fear, avoid talks and behaviors that aggravate the fears (verbal or physical violence, inadequate discussions, verbal threatens, loss of control)

#### **Deficiency indicators**

Not listening; not answering; not comforting; emotional inhibition; verbal violence; physical violence in the child's environment; threatens; loss of control.

### **Willingness to help resolve problems or symptoms of emotional distress**

#### **Satisfaction indicators**

Identification or recognition of the problems or symptoms of emotional discomfort in the child; adequate evaluation of the magnitude of the symptoms; provision of specific help ; access to specialized help when the family is not sufficient.

#### **Deficiency indicators**

No recognition of the problems or symptoms of the emotional discomfort of the child; minimization of its importance; rejection or delay in the provision of specialized attention when the kid shows relevant symptoms of psychological discomfort.

## Social needs

Provision of guides and limits to behavior

### **Satisfaction indicators**

Establishment of boundaries to the inadequate behaviors of the child; consistent discipline, understood as a lesson and transmitted with empathy and affection; inductive discipline usage; overview of the activities of the kid.

### **Deficiency indicators**

No establishment of limits to the behavior of the kid; low implication or supervision; usage of disciplinary strategies based on the reaffirmation of power or the removing of affection; inconsistent discipline, choleric or explosive, rigid or inflexible.

## **Learning to control emotions and appropriate behaviors in order to be able to participate in social contexts and to establish relationships with other people in the right way.**

### **Satisfaction indicators**

Indoctrination of moral values; instruction in the control of impulses; education in the respect to the individual differences; development of the empathic capabilities.

### **Deficiency indicators**

Exposition to violent behaviors; exposition to parental or adult antisocial figures, abusive or highly inadequate; reinforcement or permissiveness of antisocial conducts; lack of control or support of impulses and aggressive conducts.

## Social relationships network

### **Satisfaction indicators**

Friendship and fellowship relations with equals (Sponsor contact and interaction with others in the family environment and the school...); continuity in the relationships; group activities with other families and children; addition to groups and collectives where other kids participate.

### **Deficiency indicators**

Social isolation; long time gaps separated from friends; impossibility to contact with friends; prohibition of friendships; risky companies.

## Playful interaction

Satisfaction indicators

Playful interaction with other kids and people who don't belong to the family.

Deficiency indicators

Absence of other kids; absence of interaction with other people beside the relatives; lack of toys or play tools; inadequate toys.

## **Cognitive needs**

Provision of exploration experiences and learning

### ***Satisfaction indicators***

Stimulate the senses; environment with stimulation (visuals, tactile, auditory, etc.); quantity, variety and contingency of stimulation, playful interaction in the family; linguistic stimulation.

### ***Deficiency indicators***

Sensorial deprivation; sensorial poverty; monotony stimulation; no contingency in the response; lack of linguistic stimulation.

## **Acquisition of knowledge and skills through an structured educational process**

### ***Satisfaction indicators***

Provide stable and structured education

### ***Deficiency indicators***

No provision of an stable and structured education

## **Social and physical exploration**

### ***Satisfaction indicators***

Contact with the physical and social environment, rich in objects, toys, natural elements and people; exploration of social and physical atmospheres; offering a "security net" to the kids in order to allow them to explore, share experiences with them.

### ***Deficiency indicators***

Poor environment; lack of provision of support in the exploration; no sharing of experiences with adults

## **Understanding of the social and physical reality**

### ***Satisfaction indicators***

Listen and understanding in a contingent way to the questions, tell the truth, make the kid be participant, the suffering, the pleasure and the death; transmitting a positive view of life, the relationships and the links; transmitting aptitudes, values and prosocial and adaptive rules; tolerance with discrepancies and differences.

### ***Deficiency indicators***

Not listening; not answering; replying in an inadequate moment; lying; hide the reality; pessimistic view of life, the relationships and the links; transmission of antisocial values; dogmatism, racism.

## EVALUATION INDICATORS FOR BASIC NEEDS 5-14 YEARS

### **Physical needs**

- Good health in general; common diseases.
- The kid receives the required help when sick
- Weight and size in the expected level
- The kid receives an adequate diet
- Personal Hygiene
- Clothing adequate for the weather
- Proper and clean clothing on a daily basis
- Clean house, including the bed of the child
- The parental figures make sure that the child has an adequate personal health
- The parents teach the kid healthy habits and to be responsible for his own health
- Attend regular medical checks
- Vaccines, in case of missing one of them being for a reasonable cause
- The diseases affecting the child have a medical explanation
- Adequate dental hygiene
- The parental figures make sure that the child sleeps enough and that there's a quiet environment to do so

### **Safety**

- Adequate attention to injuries in the child
- The injuries or bruises have a reasonable cause
- Protect the kid from the aggressions
- The parental figures have acted to protect the kid from the bullying
- There are safety places at home for the kid to play
- Parents are aware of the location of the child
- Receives an adequate supervision taking into account his personality and level of development
- Parents supervise the relationship between the kid and his siblings
- The kid is supervised by responsible adults, or plays in places where the parents have already checked that are secure
- The kid is accompanied by an adult to school whenever necessary
- There are responsible adults and known by the kid who take the kid to school and back home.
- There is a limited amount of people supervising and taking care of the child
- Parents have taught the kid how to behave with strangers
- Parents make sure that the kids is supervised or have help in potentially dangerous places
- There is at least one adult that has the responsibility of keeping the house
- Protection and security measures have been taught to the kid, both inside and outside the house
- It is common to leave the kid alone
- He's been left alone during the night
- He's attacked or physically punished

## **Emotional needs**

- The kid has a stable relationship with at least an adult person
- There is continuity in the adults figures who assist him
- The parents comfort the kid when he's sick, upset, scared or hurt
- Reinforcement in his confidence
- Reassurance to the kid that his parents will always support him
- Frequently has spontaneous signs of affection
- The kid is love unconditionally
- Parents show to be proud of the child
- He's accepted as a member of the family
- The kid participates in the family celebrations
- Parents spend sufficient time with the kid as to allow them to develop a strong and positive link
- Reinforcement of the establishment of the affective relationships in the family
- Reinforcement of the efforts and achievements of the kid
- The child is supported when targeted with mockery and aggressions from other kids
- He's encouraged to speak about his fears and concerns
- The answers that the kid receives are consistent and predictable
- Parents show interest about the kid's activities at school
- Parents reinforce and support his academic achievements
- Disagreements in the family environment are solved in a pacific way
- The child has a routine, his daily life is organized and stable
- Kid's effort to be independent are respected
- The kid is promoted to acquire larger autonomy dimensions
- Parents promote the acquisitions of new responsibilities for self-caring being those adequate to his age or level of development, and the kid is reinforce because of this, although always supervise and check that the kid is safe.
- The kid is reinforced for the self-care activities that he acquires: cooking, doing groceries...
- Parents support the kid when he has academic difficulties
- The clothes and appearance of the kid match his own preferences
- The kid is allowed to control some aspects of his life
- The kid isn't witness nor is implicated in the sexual intercourses between adults
- The kid isn't witness nor is implicated in violent situations between adults
- Parents make an effort to avoid that the kid witnesses strange or eccentric adult behavior that can scare him
- Parents look for external help to solve relationships problems with the kid that they're not capable of solving
- The child observes often emotional discomfort in his parents
- Is often targeted with critics or hostility signs
- There's a high pressure for the kid to obtain good academic results
- Parents target the kids when they have problems
- Often the child has to take care of younger siblings
- The child has to look after his parents

### **Social needs**

- Kid is encouraged to interact with other people
- Kid is encouraged to share and play with other children
- He's with friends outside school schedule
- He brings friends home
- Parents encourage the kid to invite his friends home
- Parents support the positive friendships of the child, they try to avoid the kid to interact with people that can have a negative influence on him
- Parents use adequate methods to get the kid to help and cooperate
- The kid is encouraged to participate in extracurricular activities
- Parents have looked for support or advice when having difficulties to handle the kid's conduct
- Parents use adequate methods to handle the kid's behavior
- There are limits and clear rules about how to behave with family
- Those limits and rules are consistent and respected by both parental figures
- The kid is helped to control his emotions
- He's encouraged to negotiate
- The way the parents interact with others is an adequate example for the child
- The child is taught respect and tolerance to others
- The child is taught good manners and to show respect to others
- The child is taught to respect the law
- The kid is encouraged to help at home
- The parents interactions within the neighborhood and with the authorities is adequate
- The child is taught to not behave in a cruel or violent way
- Parents support school's rules
- The kid is taught to behave adequately in public places
- The family feels accepted and integrated in the community
- People who belong to the family are implicated in antisocial activities
- The parents support that the kid receive sexual education or it's provided by themselves
- The parents don't consume alcohol or they do it in a controlled way, being a good example for the kid
- Parents use drugs

### **Cognitive needs**

- The kid is encouraged to be active
- The kid often plays outside
- The kid has diverse toys and learning tools corresponding his age
- His toys, books and school material are treated with care
- Parents often read books, tell stories, play with the kid or watch tv with him
- The kid goes to school on a daily basis
- The parents support and supervised that the kid does his homework
- Parents attend teacher's meetings
- The reinforce constantly the learning of the kid
- They support that the kid goes regularly to school
- They make sure that the kid is on time at school
- The parents support that the kid learn new skills
- They try to keep the kid away from family problems that may interfere with his academic evolution
- The kid has sufficient time to invest in his hobbies and interests

## EVALUATION INDICATORS FOR BASIC NEEDS 15-18 YEARS

### **Physical needs**

- The diseases of the adolescent receive the necessary medical help
- The adolescent has a healthy diet
- Satisfactory personal hygiene
- Recurrent diseases have a medical explanation
- The parents make sure that the hygienic situation of the house is adequate
- The parents teach the adolescent healthy habits
- The parents have informed the adolescent about the risks of having sexual intercourses with no protection
- The parents encourage the kid to do sports
- They encourage him to take on responsibilities about his health
- The parents are sensitive to the physic discomfort or injuries of the adolescent
- The parents make sure that the adolescent has an adequate dental health
- There is at least one adult that is responsible for the day keeping of the adolescent
- The parents make sure that if the adolescent has tattoos or earrings, he gets them under safety circumstances.

### **Safety**

- The injuries and bruises, that the adolescent may have, need to have a reasonable cause
- The adolescent is protected from others aggressions or abuses
- If the adolescent was bullied, parents have acted to protect him
- Parents try to be aware of where the adolescent is
- The adolescent is adequately supervised taking into account his personality and his level of development
- When he's been out of home for a period of time, the adolescent has always been under the supervision of other adults
- The relationship of the adolescent with siblings and/or other kids living in the family is good.
- The parents supervise the relationship of the adolescent with his siblings
- The parents make sure that the adolescent is supervised and have the necessary help when he's in potentially dangerous places
- The adolescent has been taught how to protect himself inside and outside home
- The parents try to make sure that the way from home to school is safe
- The adolescent is aggressed or physically punished

## **Emotional needs**

- There is continuity in the adults who help and take care of the adolescent
- The parents comfort the adolescent when he's upset or scared
- The parents make sure that the adolescent knows that they'll be always supporting him
- They reinforce that the adolescent is self-confident
- Often they have signs of affection towards the adolescent
- They show to be proud of the adolescent
- The adolescent is accepted as a member of the family
- The adolescent participates of the family celebrations
- The parents spend sufficient time interacting with the adolescent in order to develop a strong and positive link
- The parents reinforce the establishment of affective relationships inside the family
- The parents reinforce the efforts and achievements of the adolescent
- The adolescent is encouraged to talk about his fears and concerns
- The answers that the adolescent receives are consistent and predictable
- The parents show interest about what the adolescent does at school
- The disagreements inside the family are solved in a non-violent way
- The adolescent's daily life is organized and stable
- The adolescent is encouraged to take one more and more autonomy
- The parents encourage the adolescent to take on more responsibilities regarding his self-care, being this always linked to his age and his level of development. The adolescent is reassured in that way and is always supervised so he's safe.
- The adolescent is reinforce for the self-cares skills that he learns: cooking, doing groceries, etc.
- Adults are responsible of taking care of the family
- The responsibilities and tasks that he's assigned at home are adequate.
- There's at least one adult who is responsible for the daily keeping of the house
- The parents support and help the adolescent when he has academic difficulties
- His clothes and appearance match his own preferences
- The parents respect his sexual orientation
- The adolescent doesn't witness nor is implicated in adult's sexual intercourses
- The adolescent doesn't witness nor is implicated in adult's violent situations
- Adults look for external help when they can't solve or handle the problems with the adolescent
- The adolescent often observes emotional discomfort symptoms in his parents
- He's targeted frequently with critics and hostility signs
- There's a high pressure for the kid to have excellent academic results
- Parents support the adolescent when he's in trouble

### **Social needs**

- The adolescent is encouraged to share
- The parents encourage the adolescent to invite his friends home
- The adolescent is encouraged to be with his friends
- The parents encourage him to participate in social activities in the outside
- The parents reinforce the positive relationship of the adolescent
- The parents try to avoid that the adolescent interacts with other people who may have a negative influence on him
- The parents use adequate methods to achieve that the adolescent cooperate and has an adequate behavior
- There are limits and specific rules about how to behave in the family
- These limits are consistent and respected for both parents
- The adolescent is encouraged to negotiate
- The way in which the parents interact with others is an adequate example for the adolescent
- The adolescent is taught respect and tolerance towards others
- The adolescent is taught to respect the law
- The adolescent is taught good manners and to respect
- The adolescent is encouraged to help at home
- The parents interact with the neighbors in an adequate way
- The parents' behavior is a good example for the adolescent
- The adolescent is taught to not have a cruel or violent behavior
- The parents try to make sure that the adolescent attends his duties
- The parents support school's rules
- The adolescent is taught to behave adequately in public places
- The family feels accepted and integrated in the community
- The parents support that the adolescent receives sexual education or is provided at home
- The adolescent has a clear idea of what a responsible sexual conduct is
- The parents don't consume alcohol or they do it in a controlled way, being a good example for the adolescent
- If the adolescent left school or work he's encouraged to find a new occupation
- The parents do drugs

### **Cognitive needs**

- The adolescent is supported and encouraged to learn new skills
- The parents try to keep the adolescent away from family problems that may interfere in his academic track
- The adolescent has enough time for his hobbies and interests
- The parents support and make sure that the adolescent does his homework
- The parents attend the required meetings with the teachers
- The parents try to make sure that the adolescent goes to school as a routine



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## APPENDIX III



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**WORK IN PROGRESS**

### Evaluation of the Pelicano Program

N° dossier :  
Date (dd/mm/yyyy) :  
Professional filling the evaluation :  
Address :  
Name of the center :  
Age group :

### Evaluation of the well being indicators

1. Alimentation : In general the kid has a sufficient alimentation, diverse and adapted to age.

- School's cantine
- Food voucher
- Other

2. Hygiene : Acceptable clothing conditions, adequate to the climate.

- Use of school facilities (showers, etc.)
- Lack of personal hygiene equipment
- Other

3. Clothing : Acceptable personal hygiene, clean aspect, personal items and clothes.

- Need of general clothing
- Lack of clothes for hot/cold seasons
- Other

4. Health : Present a healthy aspect, no recurrent visits to the enfermary and not an excessive absence due to illnesses.

- Severe health issues
- Recurrent absence due to illness
- Other

5. Sleep : The kid has sufficient rest, don't show signs like falling asleep during classes or being remarkably tired.

- Recurrent sleeping problems
- Use of school facilities to rest
- Other



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**WORK IN PROGRESS**

### **Evaluation of the Pelicano Program**

6. Exercise and playing : The child uses the breaks to play or practice sports.

- He doesn't play with other kids
- Refuse to do physical activities
- Other

7. Integration : The child has normal relationships with the classmates, play with them during the breaks.

- Inexistence relations with classmates
- Bullied or excluded
- Other

8. School attendance : The child attendance rate is between the standards, when he's absent is justified and it doesn't have an impact on his academic track.

- Consistently absent
- Has no means to get to school
- Nobody brings/pick him from school
- Other

**Other remarks, general comments :**

Date :

Date :

Signature of the person filling the report

Signature of the person at Pelicano

## APPENDIX IV

The final list of items proposed by Guio et al (2017) and adopted at EU level in March 2018 for the measurement of child deprivation consists of the following items, which cover both material and social aspects of deprivation:

1. Child: some new (not second-hand) clothes
2. Child: two pairs of properly fitting shoes
3. Child: fresh fruit and vegetables daily
4. Child: meat, chicken, fish or vegetarian equivalent daily
5. Child: books at home suitable for the child's age
6. Child: outdoor leisure equipment
7. Child: indoor games
8. Child: regular leisure activities
9. Child: celebrations on special occasions
10. Child: invitation of friends to play and eat from time to time
11. Child: participation in school trips and school events
12. Child: holiday
13. Household: replacement of worn-out furniture
14. Household: arrears
15. Adults in the household: access to Internet
16. Household: home adequately warm
17. Household: access to a car for private use

	"Fruit & vegetables"	Books	Shoes	"Indoor games"	Proteins	Internet	Celebration	"Outdoor equipment"	Clothes	"School trips"	Friends	Car	"Home warm"	Leisure	Arrear	Holidays	Furniture
Sweden	0.1	0.6	0.3	0.3	0.0	0.4	1.3	0.8	0.9	0.8	0.7	3.1	0.8	2.5	8.8	5.5	5.6
Finland	0.3	0.5	0.8	0.2	0.2	0.4	0.3	0.3	3.5	0.6	0.1	3.6	0.7	1.3	16.5	7.2	11.6
Iceland	0.4	0.3	1.9	0.2	0.8	0.5	0.3	0.6	0.9	0.6	0.1	2.7	2.2	4.3	24.1	3.6	20.4
Denmark	0.5	2.5	2.3	0.8	0.6	0.6	1.3	2.2	2.0	1.4	1.5	5.1	2.5	3.3	9.5	9.1	14.6
Switzerland	0.5	0.4	0.3	0.7	1.3	0.9	1.4	0.4	1.6	0.8	0.4	4.5	1.0	5.1	10.8	4.9	12.5
Austria	0.5	1.3	1.1	1.1	1.8	1.0	1.8	3.1	1.9	2.5	3.6	7.4	4.3	10.2	10.6	17.8	15.7
Netherlands	0.6	0.5	3.6	0.4	2.5	0.2	1.9	1.6	1.6	1.4	1.2	6.5	2.8	6.4	9.5	16.2	25.2
Luxembourg	0.8	0.8	1.0	1.5	1.1	1.4	1.9	2.7	2.9	3.6	2.3	2.1	1.0	2.7	6.3	9.4	20.9
Slovenia	1.0	1.1	1.2	1.3	1.4	1.3	2.5	2.0	5.9	2.3	3.4	3.3	4.0	10.7	28.0	7.2	15.8
Spain	1.7	2.3	3.0	3.5	2.9	13.5	11.4	5.8	7.7	10.6	12.8	6.6	12.0	13.1	17.8	34.5	46.4
Germany	1.8	0.7	2.2	0.6	3.6	0.9	1.5	1.3	2.1	0.6	1.7	4.4	5.3	6.2	9.7	17.4	17.8
Malta	1.9	2.0	5.9	2.1	6.9	4.4	4.9	4.1	6.1	2.7	4.9	4.5	21.6	6.0	22.0	34.9	29.7
Cyprus	2.1	5.4	1.3	3.6	2.4	8.7	10.8	7.7	5.4	2.5	12.3	1.4	25.4	21.2	41.7	40.2	60.9
Belgium	2.3	4.4	3.6	2.5	2.7	3.8	5.8	4.2	8.2	3.8	6.0	7.4	4.8	9.0	12.1	19.2	18.4
Italy	2.6	7.7	2.9	5.6	5.7	10.8	7.1	6.0	8.5	9.5	7.5	2.3	18.4	13.7	20.6	29.5	38.8
Ireland	2.6	1.0	6.5	1.4	3.1	4.8	3.0	3.2	12.3	3.3	3.2	6.6	9.4	7.3	25.6	53.1	28.6
France	2.7	1.2	5.2	1.0	2.3	1.8	5.2	1.7	8.9	4.8	2.4	2.8	5.1	6.2	15.0	11.6	28.0
Portugal	2.9	6.4	3.6	5.4	1.2	11.5	8.3	4.6	14.4	9.1	13.6	9.9	25.2	23.4	17.7	36.7	57.5
Czech Republic	3.0	2.0	3.0	2.8	4.7	4.0	3.6	7.8	6.3	5.0	2.4	11.8	6.0	8.5	10.4	8.7	47.8
Poland	3.5	2.9	1.4	2.3	3.0	3.1	9.7	4.3	3.2	8.5	8.7	7.5	7.9	18.8	19.3	26.2	31.5
United kingdom	3.6	1.0	2.2	1.4	3.0	4.7	2.3	5.7	3.7	3.3	7.1	10.7	9.4	6.3	18.0	35.3	31.6
EU-28	4.1	4.4	4.7	4.7	5.2	6.9	7.2	7.1	7.5	7.4	8.2	8.7	10.0	12.6	18.3	26.3	33.8
Croatia	4.5	7.2	3.2	5.7	6.2	4.9	5.6	5.9	5.3	7.8	7.4	7.0	9.1	8.9	35.9	29.2	32.3
Greece	5.4	7.2	0.6	4.1	9.2	8.9	18.9	10.1	1.8	21.2	14.1	8.6	30.5	15.8	54.2	41.3	57.5
Estonia	6.7	2.5	1.6	1.6	6.1	0.9	3.4	3.7	2.4	3.0	4.9	9.7	1.4	4.1	16.2	10.3	27.4
Lithuania	7.8	2.3	0.4	2.8	6.3	5.3	5.0	6.6	13.0	5.8	9.9	12.0	25.6	18.8	17.8	19.2	50.1
Serbia	9.7	7.9	8.2	6.2	15.1	13.8	10.6	10.9	13.8	15.0	7.9	20.9	15.6	20.9	48.5	39.7	61.4
Slovakia	9.8	10.4	6.6	7.6	12.9	9.1	12.0	11.0	14.0	9.1	15.3	13.9	7.8	11.0	10.8	15.5	45.3
Latvia	10.0	11.0	11.7	8.7	8.2	8.1	10.3	16.4	24.5	7.6	11.3	23.4	18.2	16.2	31.6	27.6	57.7
Romania	14.8	24.8	28.0	42.4	21.6	36.7	33.2	55.5	26.6	30.3	40.1	45.3	15.4	60.1	29.3	61.4	67.3
Hungary	22.8	15.5	7.8	13.7	22.0	18.2	15.4	17.0	27.2	15.2	30.6	31.1	12.5	20.9	36.2	51.1	52.9
Bulgaria	40.2	43.2	49.0	38.4	42.4	26.9	32.3	52.0	36.2	42.5	41.4	30.2	40.2	52.3	43.9	54.6	72.1
Brussels	7.6	10.6	8.0	7.4	9.7	10.4	15.6	12.6	15.7	12.5	15.8	25.4	12.3	19.8	13.0	32.0	28.4
Wallonia	3.9	4.7	6.5	1.8	3.8	4.9	8.5	4.8	14.0	5.4	8.6	6.0	6.7	13.3	15.9	24.8	29.5
Flanders	0.2	2.9	1.0	1.9	0.5	1.8	2.1	2.0	3.0	0.9	2.2	4.5	2.0	4.0	9.5	13.0	9.5

Source: Guio, Marlier, Vandenbroucke and Verbunt (2018) for EU countries.  
Authors' computation for Belgian Regions, on the basis of EU-SILC 2014 cross-sectional data.



**Stichting Pelicano**  
Ons hart voor kansarme kinderen



## APPENDIX V

Children population	
Age	Amount %
6-17Y	731 42%
12-18Y	992 57%
>18Y	21 1%
<b>Total</b>	<b>1744 100%</b>

Color code	
	18Y-24Y
	24Y-27Y
	27Y-32Y

age tranches transition

Assumptions are stated in the margin. Please change only the grey areas

Age table	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
<b>Current &gt; 18y</b>																
Absolute decrease																
(Every year three 18Y become 24Y)	21	18	15	12	9	6	3	0	0	0	0	0	0	0	0	0
<b>Children 12-18Y becoming adults</b>																
Decrease rate	16.67%															
Absolute decrease	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165
(Every year 10 kids become adults)																
<b>Children 6-12Y becoming adults</b>																
Decrease rate	16.67%															
Absolute decrease	121.8333	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122
<b>New children</b>																
Adults 18-24y	21	183	346	508	670	833	995	949	905	862	818	775	731	661	592	524
Adults 24y-27y	0	3	6	9	9	9	9	174	337	499	496	496	496	453	409	366
Adults 27y-32y	0	0	0	0	3	6	9	12	15	15	180	342	505	667	829	827
Adults 32y-37y										3	6	9	12	15	15	180
Adults 37y-42y																6
Adults 42y-52y																
Remaining origine children und	1723	1558	1392	1227	1062	896	731	609	487	366	244	122	0	0	0	0
Additional children (6y) cummu	0	51	104	158	214	271	330	555	779	1005	1232	1461	1691	1829	1968	2106
Absolute addition children		51	53	54	56	57	59	225	224	226	227	229	231	138	138	139
<b>Total below 18y</b>	<b>1723</b>	<b>1609</b>	<b>1497</b>	<b>1385</b>	<b>1276</b>	<b>1167</b>	<b>1061</b>	<b>1164</b>	<b>1266</b>	<b>1370</b>	<b>1476</b>	<b>1583</b>	<b>1692</b>	<b>1829</b>	<b>1968</b>	<b>2106</b>
<b>Total below+ac Total Pelicano kids</b>	<b>1744</b>	<b>1792</b>	<b>1842</b>	<b>1898</b>	<b>1946</b>	<b>2000</b>	<b>2056</b>	<b>2113</b>	<b>2171</b>	<b>2232</b>	<b>2294</b>	<b>2357</b>	<b>2423</b>	<b>2490</b>	<b>2559</b>	<b>2630</b>
Required increase rate																2.78%
to achieve a population of 2000 kids by 2025																



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