

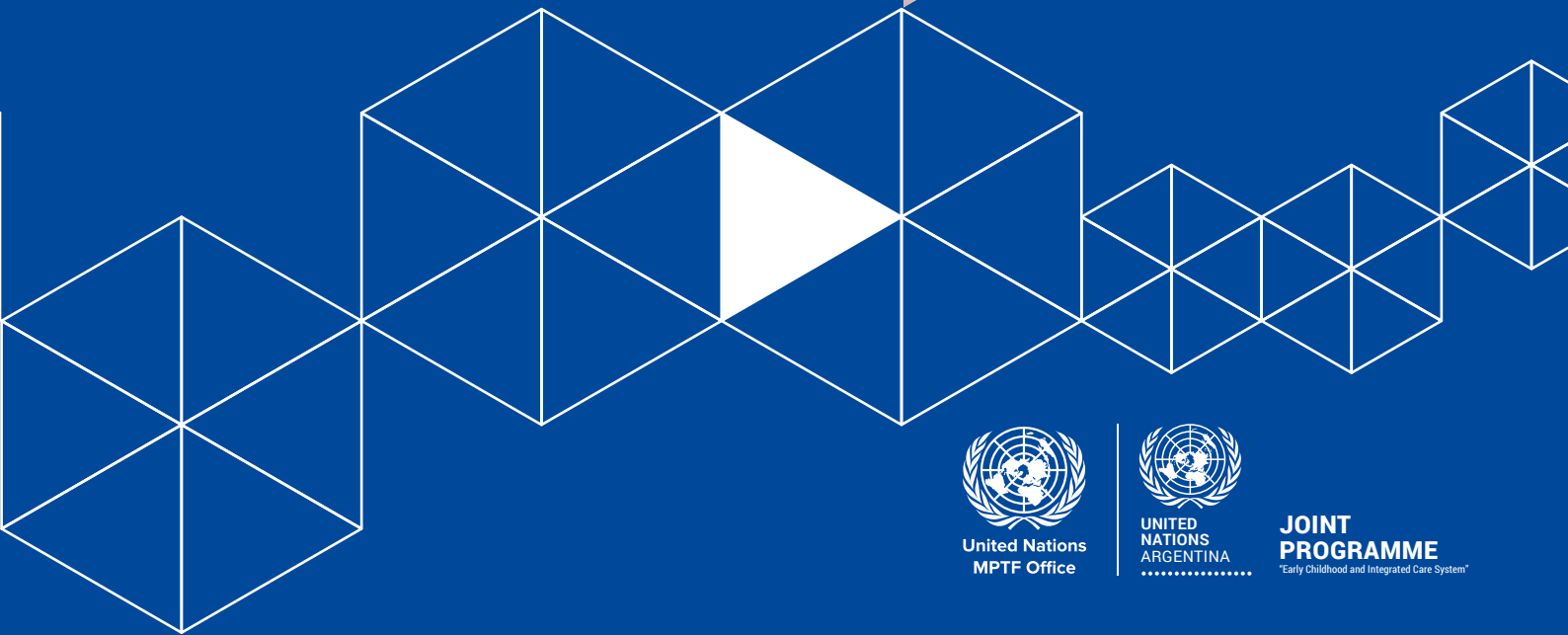


International
Labour
Organization

► Public investment in care services in Argentina

Coverage of deficits, employment generation, fiscal efforts and economic impacts

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United Nations
MPF Office



UNITED
NATIONS
ARGENTINA

**JOINT
PROGRAMME**

"Early Childhood and Integrated Care System"

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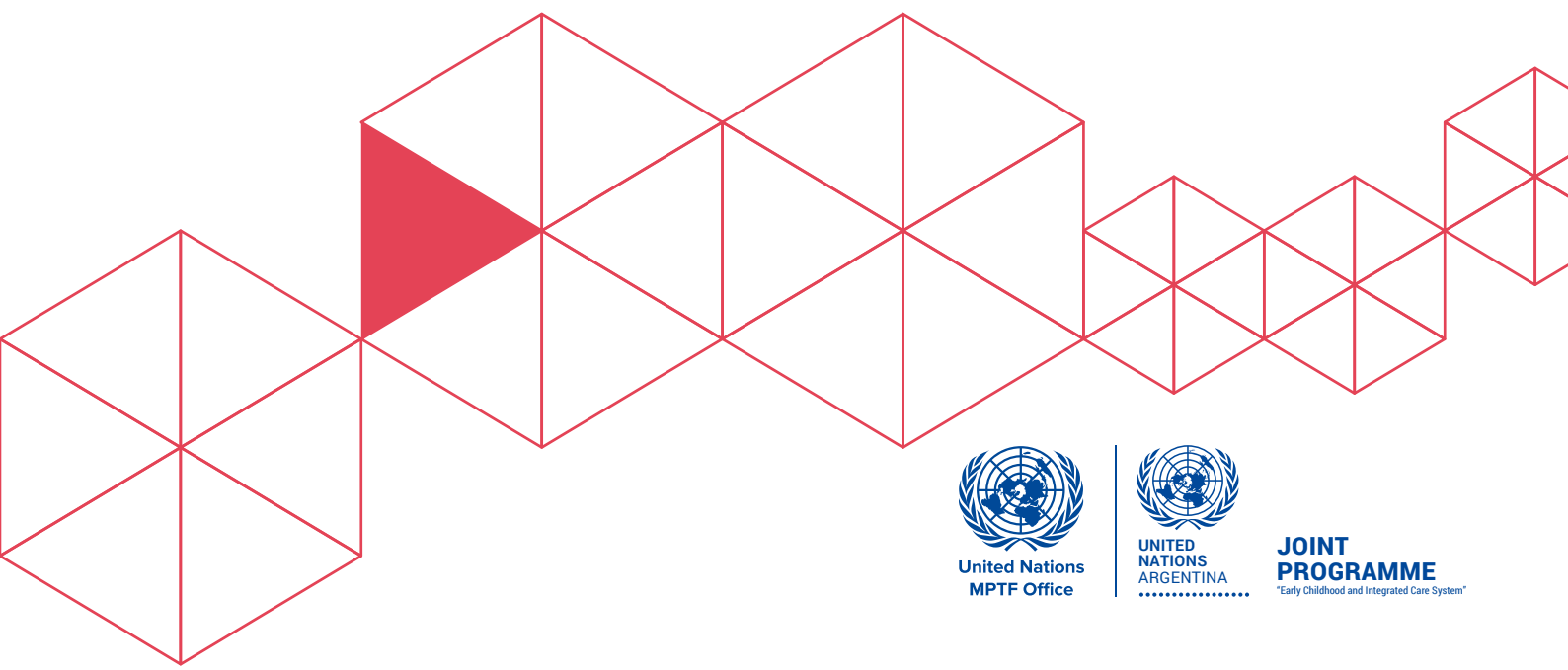
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JOINT PROGRAMME
"Early Childhood and Integrated Care System"

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► Overview

In Argentina, especially since the coronavirus (COVID-19) pandemic, it has become increasingly evident that there are gender-related, as well as economic, inequalities in the social organization of care (OSC), which it is important to highlight and to change.

In this context, using methodology developed by ILO-UN Women (2021), this study shares the results of efforts to estimate the deficits in meeting the demand for care in Argentina (coverage and quality, including staff working conditions) for each of the subsectors (education, health and long-term care), as well as the investments required to address those deficits, and the economic and employment implications that may arise from expanding and strengthening care policies in a comprehensive manner in the future by the year 2030.

The generation of jobs, in particular paid employment for women, in the care sector, but also in other related sectors such as the construction of the necessary elements of the care infrastructure, will have a significant impact on the economy, but also and more importantly, would address the inequalities in these sectors of activity which are essential for life and would strengthen rights in general.

Key words: care policies – women entering the labour market – public investment – care economy
Argentina

► Acknowledgements

This study was prepared by Gabriela Marzonetto, Corina Rodríguez Enríquez, Noelia Méndez Santolaria and Melina Pérez Neira, researchers at the Interdisciplinary Centre for the Study of Public Policies (CIEPP); and by María Priscila Ramos, María Laura Ojeda and Carlos Adrián Romero, researchers at the Interdisciplinary Institute of Economic Policy of Buenos Aires (IIEP).

The study was coordinated by Nicolás Mera, Catterina A., Colombo K. and Magalí Yance – project officers from the ILO Country Office for Argentina – and technical supervision was provided by Elva López Mourelo – officer for inclusive labour market institutions – under the framework of the Joint SDG Fund interagency project entitled “Early Childhood and Sustainable Development: Towards a Comprehensive Care System” and the Multi-Partner Trust Fund project entitled “Promoting the economic independence of women and the care of older persons and persons with a disability in Argentina”.

The document benefited greatly from the valuable contributions made by authorities and officers of the Ministries of Women, Genders and Diversity, Economy, and Public Works; as well as the detailed comments provided by colleagues from the ILO: Valeria Esquivel, a specialist in gender and employment policies; and Cecilia Lavena, project officer from the ILO Country Office for Argentina.

Finally, we would also like to thank all those people who contributed to the editing, preparation, publication and distribution of this project, in particular, Sol Gorlero, Mariana Sebastiani and Pablo Sorondo.

► Prologue

In Argentina, the COVID-19 pandemic highlighted the centrality of the care sectors to the functioning of the economy, the sustainability of society and health, and the wellbeing of people, as well as the enormous gender and income-related inequalities between those providing care, whether through paid or unpaid work. Furthermore, the crisis demonstrated the weaknesses and gaps in the care system, which were already evident prior to the pandemic. In this context, investment in care services, as well as in the related infrastructures and policies, will support a job-rich recovery.

Within this framework, it is particularly relevant to have evidence for Argentina of the potential economic impact of expanding and strengthening comprehensive care policies. This document contributes to this goal, as it presents the results of an exercise to estimate for the country the current deficits in meeting the demand for care, the investments required to address those deficits, and the economic and employment implications that may arise from this investment.

This study demonstrates that investment in the care economy could generate, in an average scenario, around 600,000 jobs in the education sector, approximately 450,000 in the health sector and more than 780,000 in the long-term care sector in Argentina by 2030. Of those, 40 to 70 per cent of the jobs created would be in the care sectors, while the remaining jobs would be generated as a result of the indirect impact on other sectors, including those related to the construction of the necessary care infrastructure.

These results show that investment in the care economy has significant potential, not only to contribute to resolving the care needs, giving a more prominent role to public services, but also to facilitate an economic recovery that generates quality employment, reduces poverty and promotes gender equality.

This publication is a valuable tool to inform investment, as well as provide information about its economic impact and the impact on employment associated with the implementation of a comprehensive system of care policies in Argentina, as established by the draft law Care in Equality, submitted by the national government to Congress in May 2022.

Yukiko Arai
Director
ILO Country Office for Argentina

► Glossary of terms

ANDIS:	National Agency for Disability	EPI:	Early childhood spaces	PISAC:	Research Programme on Contemporary Argentine
ANSES:	National Administration For Social Security	FATSA:	Federation of Argentine Health Workers' Associations	RECTPCP:	Special labour contract for Staff working in individual households
BNA:	Bank of the Argentine Nation	FLACSO:	Latin American Faculty of Social Sciences	REFES:	Federal Register of Health Establishments
CABA:	Autonomous City of Buenos Aires	FONAVI:	National Fund for Housing	SAM:	Social Accounting Matrix
CDC:	Child development centre(s)	GCBA:	Government of the City of Buenos Aires	SDG:	Sustainable Development Goal
CeNIE:	National Census of School infrastructure	GDP:	Gross Domestic Product	SHW:	Skilled health workers (Physicians/midwives nurses)
CGESCSE:	General Coordination of the Study of Costs of the Education System	GPV:	Gross Production Value	SIISA:	Integrated Argentine Health Information System
CIEPP:	Interdisciplinary Centre for the Study of Public Policies	HR:	High Road Scenario	SOC:	Social organization of care
CIPPEC:	Centre for the Implementation of Public Policies Promoting Equity and Growth	IC:	Intermediate consumption	SQ:	Status-quo Scenario
CUD:	Disability registration document	ICC:	Cost of Construction Index	STC:	Short-term care
DEIS:	Directorate of Health Statistics and Information	IDB:	Inter-American Development Bank	TSOE:	Health workers in other specialties
DINAPAM:	National Directorate for Older Adults	IIEP:	Interdisciplinary Institute of Economic Policy of Buenos Aires	UBA:	University of Buenos Aires
DINIECE:	Directorate of Educational Evaluation and Information	ILO:	International Labour Organization	UCA:	Pontificia Universidad Católica Argentina
EAHU:	Annual Survey of Urban Households	ILO-GEDI:	International Labour Organization, Gender, Equality, Diversity and Inclusion Branch	UNESCO:	United Nations Educational, Scientific and Organization
EAP:	Economically Active Population	INDEC:	National Institute of Statistics and Census	UNFPA:	United Nations Population Fund
ECAE:	Early Childhood Attention and Education	INSSJP:	National Institute of Social Services for Retirees and Pensioners, known as PAMI	UNICEF:	United Nations Childrens Fund
ECC:	Early Childhood Centres	IOM:	Input-Output Model / Input-Output Matrix	WHO:	World Health Organization
ECCE:	Early Childhood Care and Education	LTC:	Long-term care		
ECETSS:	Survey on Employment Conditions, Labour and Health, and Security	LTR:	Long-term residences		
ENCaViAM:	National Survey on the Quality of Life of Older Adults	MINCyT:	Ministry of Science, Technology and Innovation		
ENES:	National Survey on Social Structure	OECD:	Organization for Economic Co-operation and Development		
EPH:	Permanent Household Survey	OFERHUS:	Federal Observatory for Human Resource for health		
		PAHO:	Pan American Health Organization		

Executive summary

This report presents the results of an exercise to estimate the deficits in the demand for care in Argentina, the investments required to address those deficits and the economic and employment implications that may arise from the expansion and strengthening of care policies in a comprehensive manner by the year 2030.

The importance of including this sector on the national agenda can be found in the fact that, currently, the social organization of care (OSC) reproduces gender and socioeconomic inequalities; that the COVID-19 pandemic highlighted the essential nature of this work and the differences that lay in paid and unpaid domestic and care work; that care is a right of all people and that the State should guarantee it; and that this sector has significant economic potential as an employment and income generator and, consequently, to increase tax revenue.

Goals

In addition to feeding the current debates to make progress in consolidating a comprehensive structure of care policies, the goal of this exercise is to demonstrate that investment in the care economy could generate, in an average scenario, around 600,000 jobs in the education sector, approximately 450,000 in the health sector and more than 780,000 in the long-term care sector in Argentina by 2030. Of those, 40 to 70 per cent of the jobs created would be in the care sectors, (240,000 in teaching and support staff; 226,000 in medical, obstetric, nursing and other health care personnel; more than 550,000 carers and home or residential carers) and the remaining jobs in other related sectors, such as the construction of the necessary care infrastructure. This would not only contribute to resolving deficits in coverage, quality, infrastructure and

salaries in the care sector but would also contribute to the country's economic growth.

Methodology

Using the methodology proposed by the ILO and UN Women (2021), which uses as a basis the Sustainable Development Goals (SDGs) relating to the economy and care work by 2023, the purpose of this study is to establish the deficits in coverage and quality that currently exist in the care sector, as well as the public investment necessary to address them, and the potential employment and economic impact of that investment. The three subsectors in which these elements are studied under different scenarios are: (I) Education services: early childhood care and education (ECCE), primary and secondary education; (II) Health services: care provided to people who are ill/patients (short-term care, STC); and (III) Long-term care provided to older persons and persons with a disability or chronic disease (LTC).

The methodology is developed in four stages. Once the care services provided in the country in the three subsectors at the level of the national government in 2017 are characterized (*first stage*)—taking into consideration the type of service provided, the coverage and its quality, also measured in terms of the staff working conditions—the existing deficits in each subsector are identified in terms of coverage and quality of services, taking as a reference the SDGs and their

targets for 2030 (*second stage*), the public investment needed to cover those deficits is estimated in various scenarios (*third stage*) and finally the impacts of that investment on the generation of employment, as well as other economic impacts are calculated, using an input-output model and a social accounting matrix (*fourth stage*).

Conclusions and recommendations

This type of exercise, at this time when a care system is being developed in Argentina, is useful to provide an idea of the magnitude of the fiscal efforts required, as well as the associated economic and employment-related benefits. It is vital to have evidence such as this in order to understand the current situation of the Argentine care sector and its potential, and in order to make progress in expanding and strengthening rights in general.

The conclusions include the significant generation of employment that investment in the care sectors could have, in particular for women, thus contributing to the reduction of the gender gap both in terms of participation in the labour market and income.

The results are also auspicious in terms of how to finance the required fiscal efforts, including having self-financing as the highest aspiration. First, because considering various scenarios provides for the possibility of strategies for gradual improvements which would be fiscally sustainable in the medium and long terms. Second, because if the assumption of economic growth is added to the estimations, the fiscal efforts become more worthy of consideration. Third, because according to the scenarios, the fiscal efforts would not be very significant; and in those situations where they are, alternatives could be sought that could be applied more gradually.

Goal

- The goal of this exercise is to demonstrate that **investment in the care economy** could generate, in an average scenario,

**more than
1,800,000 jobs**

in Argentina in 2030:

around **600,000 jobs in the education sector**, approximately **450,000 in the health sector**, and **more than 780,000 in the long-term care sector**.


- **Between 40 and 70% would be jobs in the care sector:**

- **240,000** teachers and support staff

- **226,000** medical, obstetric, nursing staff and other health care personnel

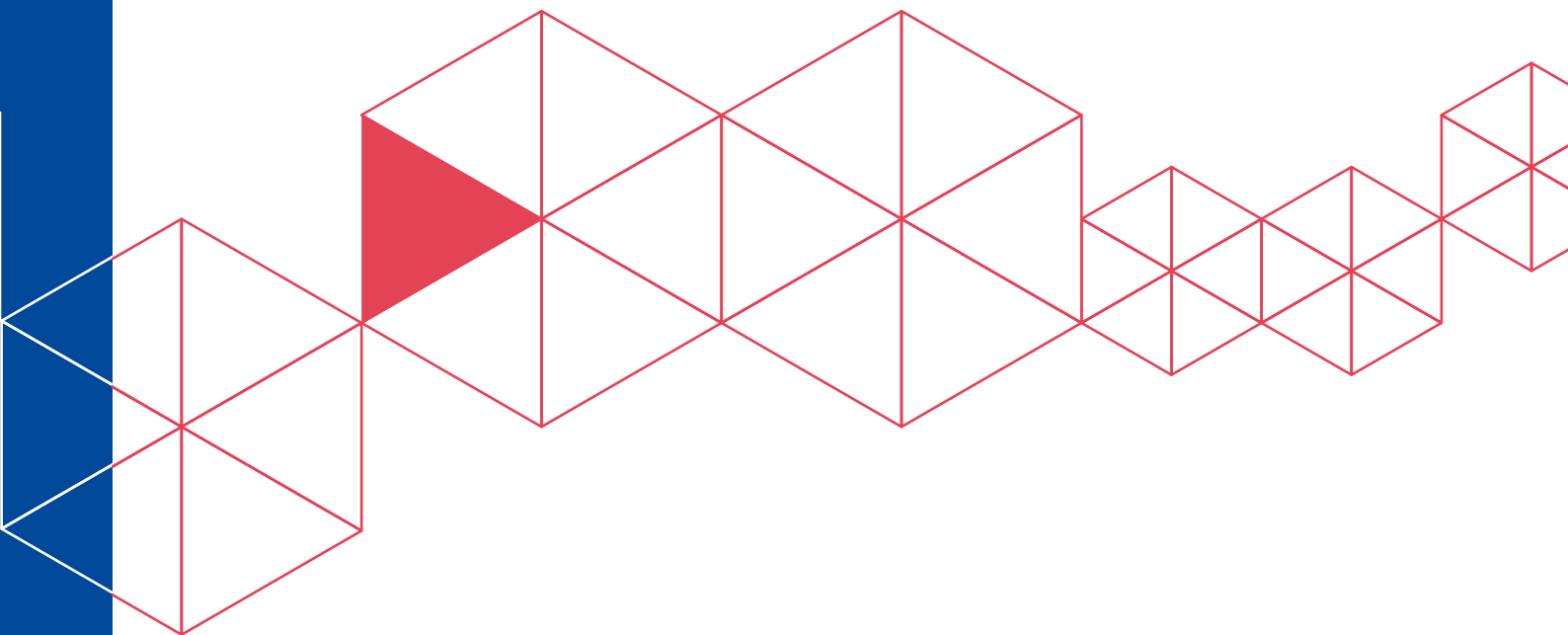
- **550,000** carers and home or residential carers

The rest of the jobs would be created in other sectors related to the investment, such as in the construction of the necessary infrastructure.



1

Introduction



► **The exercise presented in this report demonstrates the importance of and need to strengthen care policies in a comprehensive manner in Argentina, and provides an idea of the magnitude of the fiscal efforts required and the associated economic benefits that would result from building a national care system.**

In Argentina, care has been on the agenda for several years; from the pioneering work that sought to diagnose the social organization of care (OSC) in the country, mainly produced by feminist academia, through the later preparation of specific policy proposals, some of which became draft legislation, to the more recent incorporation of the issue on the feminist activism agenda.

In recent times, the issue gained new momentum from the national government. Since its creation in December 2019, the Ministry of Women, Genders and Diversity focused some of its priorities on promoting the construction of a national care system.

Advancing and strengthening this agenda is relevant for various reasons. First, because the current social organization of care is unfair and is a critical hub that reproduces inequalities (gender-related and socioeconomic). Second, because the distribution of care responsibilities is the basis of the persistent economic subordination of women and the limitation of their life projects. Third, because the COVID-19 pandemic helped to highlight the essential nature of care and the types of inequality that are embedded in domestic work and in paid and unpaid care work. Fourth, because care is to be understood as a right of all people (to receive care, to provide

care and to choose care arrangements), that the State should guarantee. Fifth, because there is a growing consensus that expanding care services may constitute, in itself, an economic recovery strategy that promotes equality. Indeed, the care sector may function as an economic sector that generates employment, sustains income, increases aggregate demand, and consequently increases tax revenues.

In this framework, those studies that estimate specific dimensions for what it would mean to expand and strengthen care policies in a comprehensive manner are particularly relevant. This study contributes to this field of work, as it presents the results of an exercise to estimate the existing deficits in meeting the demand for care, the investment required to address those deficits and the economic and employment-related implications that such investment could have.

The study is based on applying the joint methodology developed by the International Labour Organization (ILO) and UN Women (2021)¹ in Argentina, which grew out of the aspirations of the Sustainable Development Goals for the year 2030, in order to establish the existing deficits in coverage and quality.

In the case of Argentina, care deficits were estimated in three areas: (I) Education services:



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early years education and care (ECCE), primary and secondary education; (II) Health services: care provided to people who are ill/patients (short-term care, STC); and (III) Long-term care provided to older persons and persons with a disability or chronic disease (LTC). The study considered quantitative deficits relating to coverage and also qualitative deficits in the services (on the basis of certain specific indicators, such as the relationship between the number of people being cared for and workers or care workers, or the salary received for carrying out care work).

Once the deficits are identified, goals are proposed to reduce them, the public investment

required to meet those goals is estimated and then the impact of this investment on employment generation and other economic impacts are also estimated, using an input-output model (quantity and price, depending on the sector concerned) and a social accounting matrix.

The underlying argument in this exercise concerns recognizing the existence of a care economy that is highly labour intensive. Assigning budgetary resources to policies and programmes that generate quality jobs in the care sectors can generate economic and social returns visible in employment creation in other sectors (indirect and induced employment), income distribution,


sustaining demand, economic growth and, in turn, increasing fiscal revenues. The highest aspiration is that this investment in care could be self-sustaining.

The exercise described here has not been free from difficulties. These included the very operationalization of the conceptual definitions, the existence and availability of data sources that would allow the most rigorous exercise possible, and the definition of scenarios that adequately balanced desirable outcomes with feasible ones, among other things.

Despite all its limitations, it is possible to affirm that this type of exercise, in the embryonic stage of developing a care system in Argentina, is useful to provide an idea, albeit an approximate idea, of the magnitude of the fiscal efforts required, as well as the associated economic benefits. Furthermore, it provides a base for building solid arguments in favour of care policies, to fight for resources, to propose sequential and incremental strategies for the implementation of these policies, and to establish specific timelines for certain goals to be achieved.

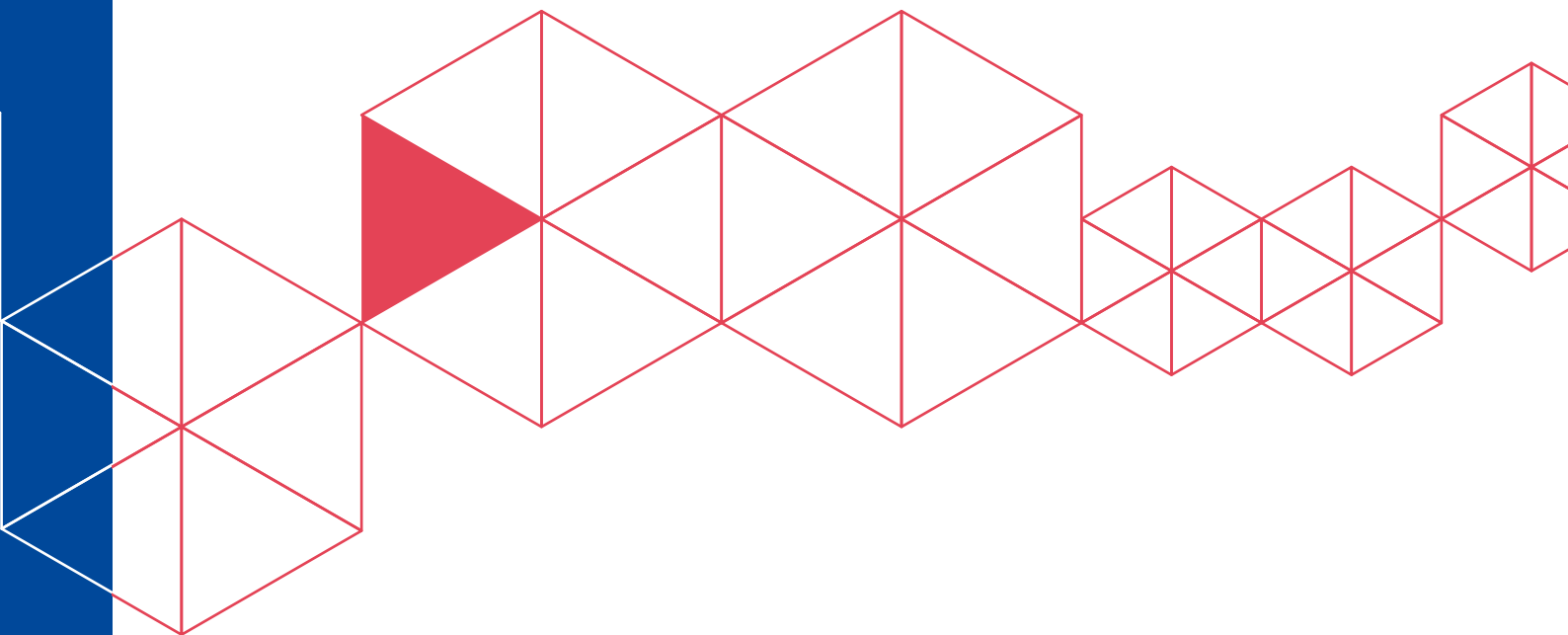
The document is organized in the following manner: after this first introductory chapter, the second chapter introduces the conceptual definitions used, including those of the target populations of the services whose deficits are sought to be addressed. The third chapter describes the methodology. The fourth chapter presents the results of the estimation of the existing deficits, the fiscal efforts required to address them according to the goals and scenarios defined, and the direct employment generation associated with this investment. The fifth chapter details the results of the economic impact study and the funding challenges. The document finishes with a brief conclusion.

1 ILO-UN WOMEN (2021). https://www.ilo.org/employment/Whatwedo/Publications/WCMS_767029/lang--en/index.htm



2

Conceptual definitions concerning the social organization of care



► **The social organization of care involves the State, the market, households and the community, four actors who provide care to the populations who need it most (children, older persons and persons with a disability) through a wide range of care work organized in three fundamental subsectors (education, health and long-term care).**

Care is part of everybody's life. However, it is not always clearly defined. In addition, it can be ambiguous, and the way in which societies organize care provision, the actors who participate in providing care, and the relationships and dynamics therein are, in many cases, normalized and become invisible.

Therefore, this chapter briefly introduces the definitions and basic concepts used throughout this piece of work.

Care and the social organization of care

Care includes any and all activities that allow daily life to be carried out, and the boundaries of that work can be as wide as they can be intangible. A relatively universally agreed understanding of care is that it comprises direct care for people, such as carrying out and managing domestic tasks in their surroundings, including cooking, cleaning, taking children to school; and can also comprise self-care and maintaining emotional attachments,

among other activities (Rodríguez Enríquez and Pautassi 2014).

Care as an activity comprises multiple aspects and is proven to be essential for sustaining life, and thus social relationships and productive activities (Carrasco 2003; Tronto 1987). For this reason, feminist economic analysis argue that these tasks do have significant social and symbolic value, but that they have, more importantly, an essential economic value, despite being historically invisible (Esquivel and Pereyra 2017; Rodríguez Enríquez 2012).

As Pautassi (2013) warns, it is essential to understand care as a universal right, which includes the legal authority of all people to demand the right to be cared for, to care for others, and to care for oneself. In this way, the recognition of its value is also linked to the recognition of the State's responsibility to provide the means to guarantee care, not only within the families and homes and in the community, but also to provide public services and to regulate the services



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on the market. These are issues that have an impact on how care is organized in society.

In contemporary societies, care is organized through interactions between four institutions and actors that provide and distribute care:

- ▶ the **State**, through its regulations and public policies (those specifically relating to care as well as others that could facilitate care, such as policies relating to public transport or basic social infrastructure);
- ▶ the **market**, through the provision of commercial care services (which include paid care work) which are accessible to sectors of the population with a given purchasing power; it also includes actions carried out by employers to meet the care needs of their workers;
- ▶ **households**, through the provision of unpaid care work carried out by members of the household; and

- ▶ the **community**, through community care arrangements (Esquivel et al. 2012; Razavi 2011; Rodríguez Enríquez and Pautassi 2014; Zibecchi 2015).

The care diamond comprising these four actors, and the relationships established between them, make up the social organization of care (SOC). Given the characteristics of the current SOC, the majority of care falls on families, and within that, particularly on women, generating social inequalities, referring to access to care as a right, and gender inequalities, which have an impact on the quality of life of those who provide and receive care.

▶ **Image 1.**

Care work

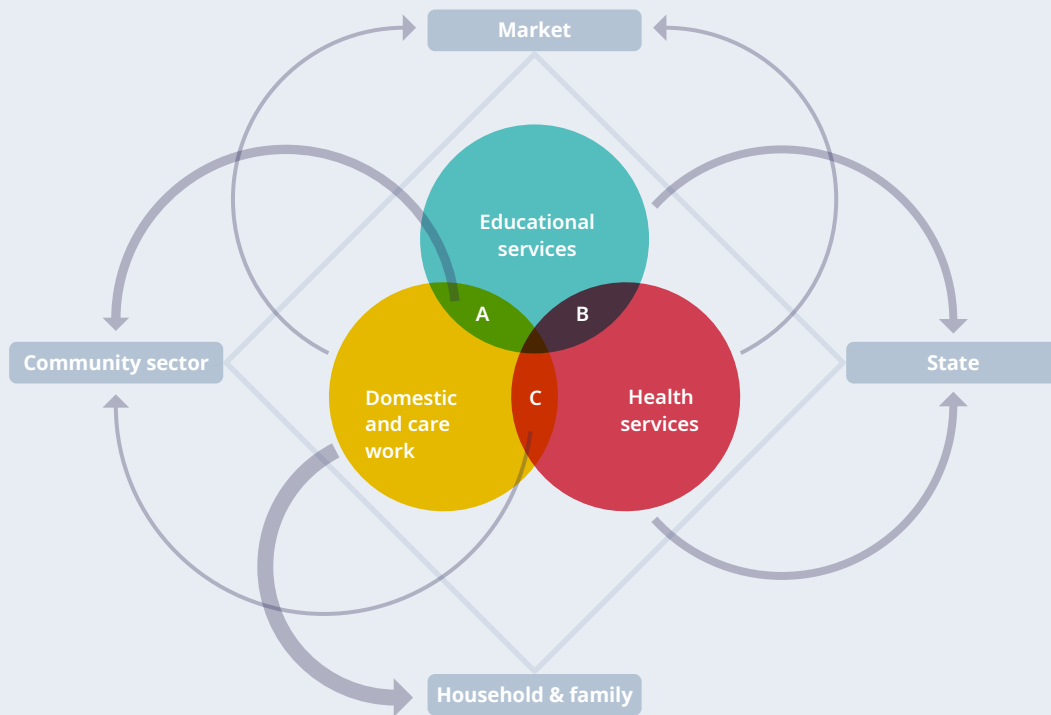
Jobs involving the provision of care are defined as a subset of service jobs, characterized by the interpersonal relationships and the face-to-face services that contribute to the development of human capacities of the care recipient, and that can be provided both within and outside the

► **Imagen 1. Care diamond: institutions, actors, services and intersections of care**

► The thickness of the arrows indicates the intensity with which each actor in the diamond provides care for each sector

► Each circle represents a subsector and each subsector comprises a complex subset of activities, professions and institutions

A – Child care
B – Special education
C – Long-term care



Source: prepared by the authors.

home, and can be paid or unpaid (Esquivel and Pereyra 2017; ILO 2019).

Care workers are a very diverse group, differing in terms of their education, skills, sector and remuneration: ranging from university professors, doctors and dentists at one end of the spectrum, to those who work in childcare or personal care at the other (ILO 2019).

They work in occupations that provide education, social and health services with the support of other workers, such as supervisors, accountants, technical personnel and administrative personnel who work in the same hospital or school. While these people do not classify themselves as care workers, their work is part of the

package of care services provided, and for that reason the ILO considers them to be inseparable from the care economy. For this reason, this report considers that all occupations in the health and social work and education sectors are part of the workforce dedicated to providing care (ILO 2019, 7-8). The provision of care, as noted in previous paragraphs, also includes staff working in private homes.

In line with the need to reverse the inequalities in these sectors of activity that are essential for sustaining life, it is necessary to develop strategies to meet Sustainable Development Goal 5, which seeks to recognize and value unpaid care work through the provision of public services, infrastructure and social protection policies (target 5.4).

Among those strategies, one is the **5 R strategy** (ILO 2019), which includes:

- ▶ **Recognize, reduce and redistribute** care responsibilities among households, State and market, as well as within households between men and women.
- ▶ **Reward** paid care work in an adequate manner through decent salaries and employment conditions for those who work in these sectors, and promote and guarantee channels for social dialogue and collective bargaining to **represent** those who carry out roles in this sector (ILO 2019).

Populations dependent upon care

There are stages of life in which the need to receive care is fundamental to survival. Two of these stages are childhood and adolescence, especially early childhood, commonly understood to comprise the time from birth to primary education (between 0 and 5 years).

That said, childhood at all ages is a stage of dependence for survival, wellbeing and comprehensive human development. Other stages and circumstances include old age, illnesses and disability, as they imply some degree of dependence (Alonso and Marzonetto 2019).

However, not all older people or people with a disability require permanent care. Among those groups and people with a chronic illness, the level of care needed will be determined by the degree of dependence when carrying out activities that are considered to be essential. (Redondo, Manzotti and de la Torre 2013).

Care services and sectors

Based on the definition of care work and having identified the populations that are more

dependent on care in their daily lives, and using a methodology proposed by ILO-UN Women (2021), the following subsectors of care provision were identified:

Education services sector

- ▶ Early childhood care and education.
- ▶ Primary and secondary education (mainstream and special education).


Health services sector

- ▶ Care provided to people with an illness/patients (short-term care).

Long-term care

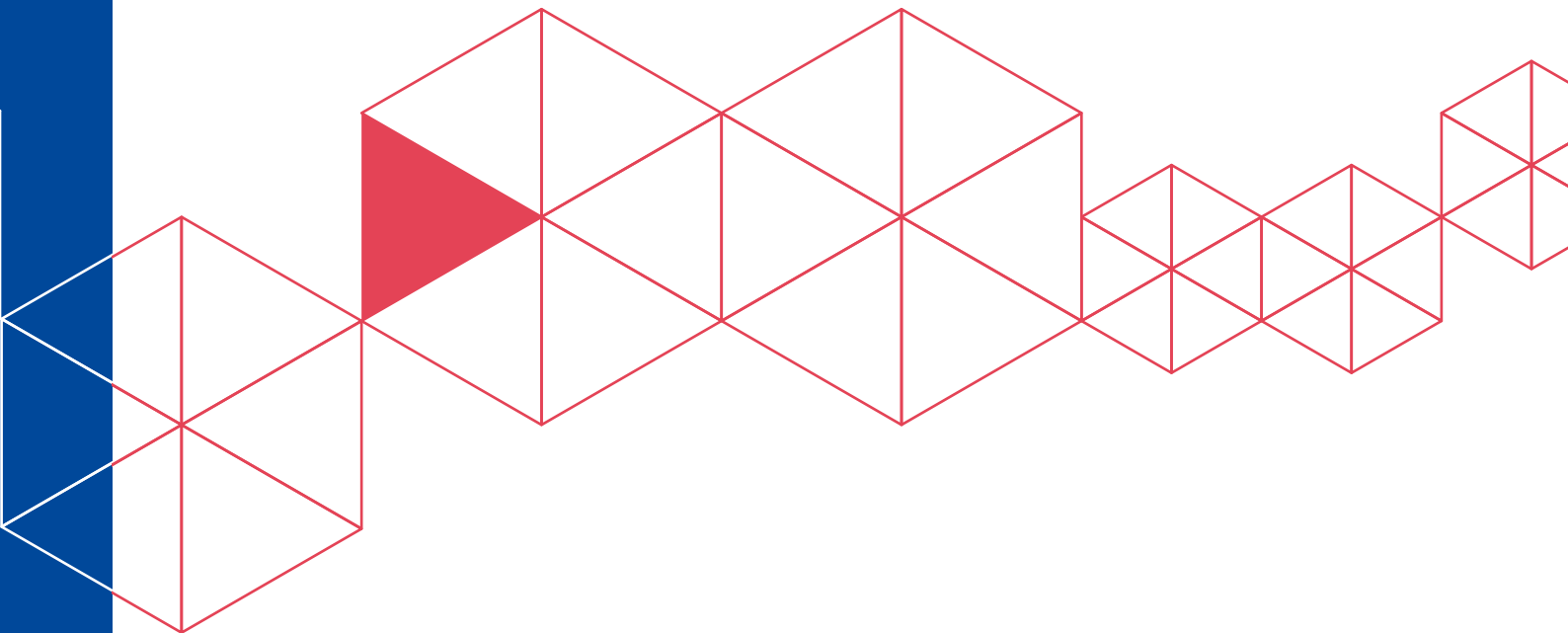
- ▶ Long-term care provided to older persons and persons with a disability or chronic illness.¹

¹ It should be noted that, while following the ILO-UN Women methodology (2021), long-term care is considered to be part of the health sector, and in practice may or may not involve specific health care. In some cases, care means supporting basic needs of daily life (such as eating, personal hygiene and movement), which do not require specific medical knowledge.



3

Methodology



► **Examining the care deficits, establishing policy goals for each of the care subsectors, calculating the investment or fiscal effort necessary to expand coverage and improve it, and estimating the macroeconomic and employment impacts of the investment scenarios are the four stages that make up the methodology used.**

As mentioned previously, this study is based on the methodology developed by the ILO-UN Women (2021), which consists in estimating for each of the care subsectors the existing deficits in meeting needs, and through different scenarios with different goals of maintaining or improving the situation, calculating the public investment needed to reverse those deficits, in terms of fiscal efforts, and estimating the impact of this investment in the generation of employment and other economic aggregates.¹

The methodology comprises four stages. The **first stage** seeks to examine the existing deficits in care services. To that end, the care services provided in the country at the level of the national government² in 2017³ were characterized, taking into account the type of service provided, its coverage and the quality of the coverage, for each of the components of the chosen care subsectors. In order to estimate the potential demand, and thus, the magnitude of the deficits in the care services, the three populations with the greatest degree of dependence on care in the same year were characterized.⁴

Once the deficits in the care services had been estimated, the **second stage** is to establish policy goals for each of the given subsectors that would meet current and future care needs. The SDG targets were used to define the policy goals, which were set for the period to the year 2030, to coincide with the target date of the 2030 Agenda for Sustainable Development.

Using the chosen methodology (ILO-UN Women 2021), two reference scenarios are proposed:

- The **Statu-quo (SQ) scenario** considers maintaining the current situation until 2030. That is to say, the policy goal would be that the

current situation in terms of the coverage of care services and their quality (that is to say, quality of services and working conditions) in the care sectors will not have deteriorated. In this case, the care deficit would be explained only by the growth in the population that may need care, and its size will depend on the ratio of people requiring care to care workers. In this scenario, no improvement is planned either in the coverage (proportion of people requiring care who have their needs met), or in the quality of that coverage (measured by the number of people cared for by each care worker), or in the quality of employment in these sectors (measured primarily in terms of salary).

- The **High Road (HR) scenario** proposes establishing improvements in terms of coverage and quality of service, in order to make progress towards attaining the targets set out in the SDGs. In the reference methodology, these goals are set according to the average situation in the group of countries to which the country under analysis belongs. In the case of Argentina, the reference is given by the situation in upper middle-income countries. If the coverage parameters noted in the country are higher than the average noted in the respective group, the High Road goal is limited to maintaining those levels. The targets for the High Road scenario are established for three types of scenarios:

- Mimim scenario
- Average scenario
- Maximum scenario

In order to develop these scenarios, more than 60 proposals were made that combined different aspirations in terms of coverage and




Campaign "Children at play". Val, L./ ILO.

quality. The final decision on which of those proposals was to be adopted in order to define the scenarios was a joint decision by the ILO and its counterparts, applying criteria relating to aspiration and feasibility. In the next chapters, the selected scenarios will be introduced for each of the subsectors.

The **third stage** involves calculating the necessary investment, or the fiscal effort required to address the existing deficits in the various care subsectors, establishing goals for expanding coverage and improving the quality of that coverage, including working conditions.

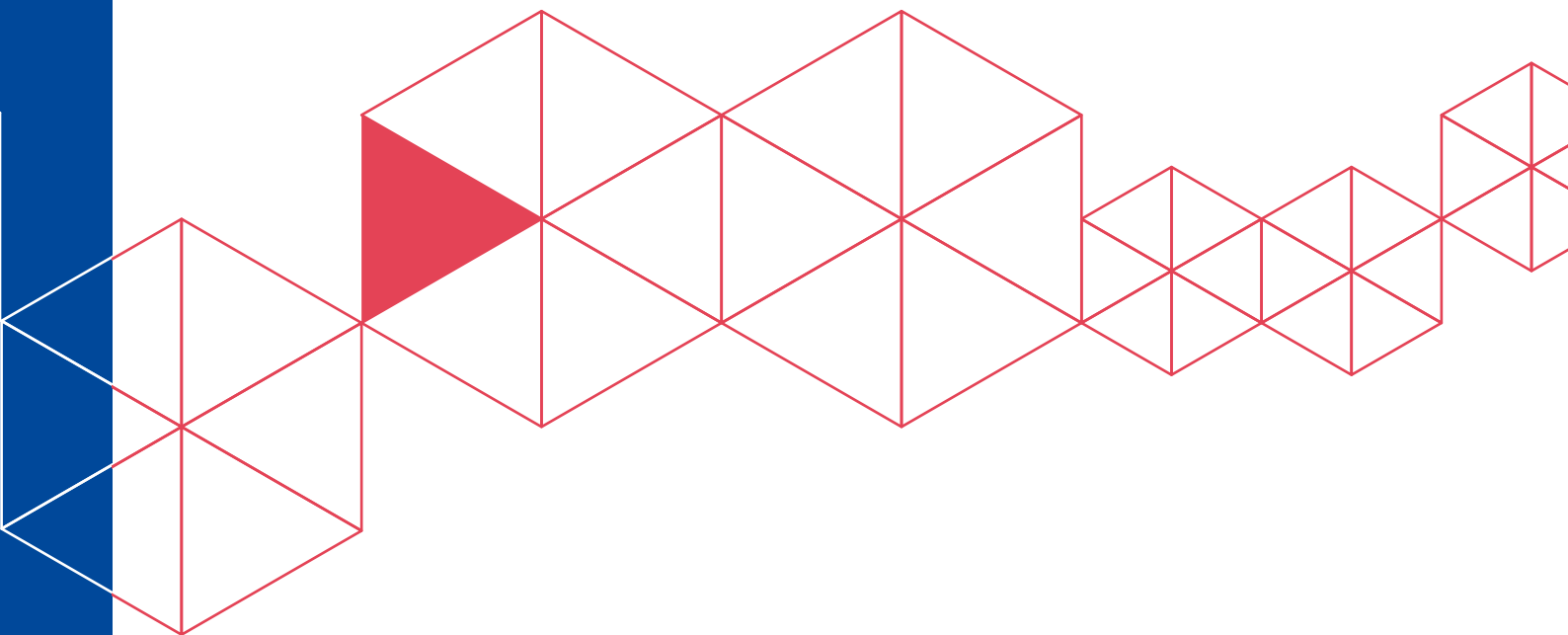
The **fourth and final stage** consists in estimating the macroeconomic and employment impacts of the various investment scenarios. This stage enables the net financing needs to be measured, once the positive impacts have been considered in relation to activity, employment and income generation, and consequently, tax revenue.

-
- 1 For more detail regarding the conceptual and methodological definitions used, see Annex III.
 - 2 Without ignoring the federal nature of the country and the functional, administrative and budgetary decentralization process concerning the many services dealt with here, and due to the complexity involved in systemically estimating the proposed scenarios, it was decided to carry out an analysis at the national level. It is understood that this study could be replicated, with the necessary adaptations, at subnational levels.
 - 3 Taking the year 2017 as the point of reference is a methodological decision linked to the fact that this is the last year for which a social accounting matrix is available, which facilitates the evaluation of the economic impact on investment in care.
 - 4 In this regard, Primary data sources were consulted, including official statistics, documentary sources and public administrative records; as well as Secondary data sources, including previous studies and research. For a detailed analysis of the sources of information used, see Annex I and Annex II.



4

**Estimating deficits, defining scenarios,
evaluating fiscal efforts required and
potential employment**



► **Investment needed to improve the coverage and quality of care services in Argentina could reach 5 per cent of GDP, and may generate between 260,000 and more than 1 million direct jobs that depend on the care sector.**

Education subsector

The educational services subsector is further subdivided into four segments¹. The first corresponds to initial education and comprises formal and informal early childhood care and education services. The second and third segments include primary and secondary education, respectively, which together with the rooms for four- and five-year-olds from the initial level, represent the 14 years of compulsory education. The fourth and final segment is that relating to special education, which cuts across all levels of education, is governed by the principle of educational inclusion, and provides educational care in all specific

problem areas that cannot be addressed in mainstream education. **Table 1** summarizes this structure.

To identify the current provision of educational services, their coverage and quality is analysed at each level. The ratio of enrolment to the population and its scope depending on the type of school day (regular or extended) are used as indicators of coverage. To analyse the quality of the coverage, the number of students per teacher, staff salaries and infrastructure are determined. **Table 2** shows that the base coverage level is high for the initial pre-school level, but low for extended school days².

► **Table 1. Structure of the education subsector**

Age																	
0	1	2	3	4	5	6	7	8	9	10	11	12 ¹	13	14	15	16	17
Mainstream and special education²																	
Initial level				Primary level (basic education)						Secondary level (secondary education)							
Pre-school		Kindergarten		Grades 1-3			Grades 4-5			Secondary level (secondary education)							
Not compulsory				Compulsory													

Notas:

¹ In 12 of the 24 provinces of the country, primary education ends in seventh grade, but in the rest of the provinces, this year is part of secondary education.

² Special education cuts across all levels of education, it is governed by the principle of educational inclusion and provides educational care in all problem areas that cannot be addressed in mainstream education.

Source: prepared by the authors.

► Table 2. Service coverage in the education subsector in Argentina (2017)

Subsector	Coverage Enrolment/ population (%)	Quality of coverage			
		Ratio students / teacher	Teacher salary (current Argentine pesos)	School day	
				Coverage for regular school day (%)	Coverage for extended school day (%)
Initial pre-school level (0 to 3 years)	16 %	13	--	--	--
Initial level (4 and 5 years)	96 %	15	\$17 217.90	--	--
Primary level (6 to 12 years)	100 %	15	\$17 582.60	78 % of service units; 86 % of students	22 % of service units; 14 % of students
Secondary level (13 to 18 years)	91 %	25	\$13 622.50	--	--
Special education (from 6 years)	89 %	2	\$15 605.00	--	--

Notes:

All information represents a national average.

The information regarding coverage and ratio of students to teachers was prepared using the 2017 Educational Statistics Yearbook (Ministry of National Education), Operational Management of Research and Statistics (Ministry of Education, Government of the City of Buenos Aires (GCBA)), General Coordination of Cost Study, the Latin American Faculty of Social Sciences and UNICEF (2020).

The information on teachers' salaries was produced using data from the General Coordination of Cost Study/Subsecretariat of Planning, Development and Innovation/Secretariat of Educational Evaluation and Information/Ministry for the Economy and information provided by the provinces for the fourth quarter of 2017 and with the ANDIS Catalogue of Activities, remuneration in October 2017, Cat.A. For mainstream education, the average salary was weighted towards the quantity of teaching positions per jurisdiction according to data from the 2017 Educational Statistics Yearbook: i) for the initial and primary levels, the calculation took into account the positions of student-facing teacher + support + one-on-one staff; ii) for the secondary level, the number of student-facing teachers + support were taken into account; and iii) for the initial level: the total number of teaching positions. No information was obtained about salaries at the initial pre-school level. The information on initial pre-school education is based on the report produced by FLASCO and UNICEF (2020) on the first SIM-CDI survey from October 2019 (not including early childhood centres (ECC) in the Autonomous City of Buenos Aires (CABA)).

Information concerning the types of school day was only available for the primary level, and was determined using the 2017 Educational Statistics Yearbook (Ministry of National Education).

Source: prepared by the authors using the 2017 Educational Statistics Yearbook (Ministry of National Education), Operational Management of Research and Statistics (Ministry of Education, GCBA), General Coordination of Cost Study, and the Latin American Faculty of Social Sciences and UNICEF (2020).

In terms of quality, the ratios of students to teachers were in alignment with proposed international standards, but the salary amounts of teaching staff should be increased.

► Defining policy goals for the education subsector

Based on the situation in the education subsector, the minimum, average and maximum scenarios propose a series of improvements in terms of coverage and quality of services (including working

conditions). Table 3 summarizes the goals established for each scenario and Box 1 collates some specific comments on the proposed goals.

► Results of the estimation of deficit coverage in the education subsector

On the basis of the deficits identified in the previous chapter and the status quo and the minimum, average and maximum high road scenarios, for each education subsector the following were determined: (i) the number of

► Table 3. Minimum, average and maximum *High Road* goals for the education sector

Subdivision	Mínimum		Average		Máximo	
	Coverage (enrolment)	Quality of coverage (ratio of students per teacher, salaries an infrastructure)	Coverage (enrolment)	Quality of coverage (ratio of students per teacher, salaries an infrastructure)	Coverage (enrolment)	Quality of coverage (ratio of students per teacher, salaries an infrastructure)
Initial level	0 to 3 years: 50 % 4 to 5 years: 100 %	Student per teacher: ► 8 in preschool ► 15 in kindergarten Salaries: + 7,20 % Infrastructure: + 3 876 934 m ²	0 to 3 years: 50 % 4 to 5 years: 100 %	Student per teacher: ► 8 in preschool ► 13 in kindergarten Salaries: + 7,20 % Infrastructure: + 3 876 934 m ²	0 to 3 years: 50 % 4 to 5 years: 100 %	Student per teacher: ► 8 in preschool ► 13 in kindergarten Salaries: + 7,20 % Infrastructure: + 3 876 934 m ²
Primary level	100 % Maintaining the existing parameters of the extended school day	Student per teacher: ► 15 Salaries: + 4.98 % Infrastructure: + 385 385 m ²	100 % Maintaining the existing parameters of the extended school day	Student per teacher: ► 13 Salaries: + 4.98 % Infrastructure: + 385 385 m ²	100 % with an expansion in the extended school day (50 % regular school day, 50 % extended school day)	Student per teacher: ► 13 Salaries: + 4.98 % teachers on regular school day + 69.77 % Teachers on extended school day Infrastructure: + 385 385 m ²
Secondary level	100 %	Student per teacher: ► 25 Salaries: + 35,49 % Infrastructure: + 3 237 300 m ²	100 %	Student per teacher: ► 19 Salaries: + 35,49 % Infrastructure: + 3 237 300 m ²	100 %	Student per teacher: ► 19 Salaries: + 35,49 % Infraestructura: + 3 237 300 m ²
Special education (cross-cutting)	100 %	Studentes per teacher: ► 2 Salaries: + 18,20 % Infrastructure: 92 284 m ²	100 %	Studentes per teacher: ► 2 Salaries: + 18,20 % Infrastructure: 92 284 m ²	100 %	Studentes per teacher: ► 2 Salaries: + 18,20 % Infrastructure: 92 284 m ²

Source: prepared by the authors.

additional beneficiaries resulting from the increase in enrolment coverage, (ii) the direct employment generation, in terms of number of jobs, and (iii) the fiscal cost of addressing the deficits. The calculations of this fiscal

cost were made using 2017 prices and are expressed in terms of the GDP of that year, as it is assumed that the relative importance of the sector for the economy will remain stable over time.

► Box 1. Specific comments on the proposed goals

- Concerning coverage, and given the high baseline level, the primary focus is on expanding coverage at the initial level and increasing the coverage of the extended school day at the primary level (in this case, for the maximum scenario).
- Concerning the quality of services in terms of the ratio of students to teachers, while the baseline level in Argentina is good, the number of students per teacher is to be improved: at the initial pre-school level, one teacher is proposed for every eight students in all scenarios; in kindergartens and at the primary level, the average and maximum scenarios propose a ratio of one teacher for every 13 students; and in the average and maximum scenarios at the secondary level, the proposed ratio is 19 students per teacher.
- Concerning teacher salaries, an increase is proposed to match the labour income attained by registered salaried workers aged between 24 and 65 years who have completed a course of university education³. The salary increase is the same in all three scenarios at all levels.
- In order to expand the infrastructure, all cases would require the construction of new schools, taking the number of square metres per student as a unit of measurement, establishing 4 m² as a minimum requirement at the initial level and 5 m² at the primary and secondary levels, in accordance with the minimum space requirements per student required in the regulations from the Infrastructure Directorate of the Ministry of Education (1998:14)⁴.

Table 4⁵ reflects the fact that maintaining the current situation (SQ) until 2030 would generate practically no additional costs: the total for all levels would require a fiscal effort of only 0.03 per cent of GDP, while the additional costs of expanding the infrastructure represent 0.39 per cent of GDP. This is primarily as a result of the increase in enrolment in middle schools and primary schools, and the reduction at the initial level, as a result of the population reduction projected for these age groups.

The fiscal effort for the various high road (HR) scenarios is also modest in terms of expanding coverage and quality, as the maximum scenario represents an effort equivalent to 1.32 per cent of GDP. However, the effort increases if you take into account the infrastructure deficits that require an increase of between 2.38 per cent and 3.64 per cent of GDP (which would mean fiscal efforts of between 3.08 per cent and 4.96 per cent of GDP).

Improving coverage by meeting the proposed goals would have a positive impact on employment generation, which according to the source used here, could reach almost 300,000 direct jobs (across teachers and support staff), in the maximum scenario.

Short-term care (STC)

With regard to this type of hospital care, this analysis includes services and professions focused on the goals of reducing perinatal mortality rates, reducing the incidence of infectious diseases per 1,000 inhabitants, and the detection and reduction of the incidence of serious diseases.

In the same way as the education subsector, in order to identify the supply of STC services in the health sector⁶, its coverage and quality are analysed, differentiating between types of

► **Table 4. Estimated beneficiaries, job creation and fiscal effort needed to address the deficits of the education subsector according to the various coverage scenarios by 2030**

	Coverage of enrolment deficits 2030–2017 (number of additional beneficiaries)	Total job creation 2030–2017 (number of jobs)	Cost of increases in coverage and quality of services (% GDP)		
			Differential 2030–2017	Cost of infrastructure	Total cost
Population between 0 and 18 years	Status quo scenario				
	278 045	17 536	0.03 %	0.39 %	0.42 %
	Minimum scenario (High Road)				
	1 712 227	184 996	0.70 %	2.38 %	3.08 %
	Average scenario (High Road)				
	1 712 227	198 313	0.76 %	2.38 %	3.14 %
Maximum scenario (High Road)					
2 607 495	290 011	1.32 %	3.64 %	4.96 %	

Source: prepared by the authors.

health service or profession. In terms of coverage, the situation is described using indicators relating to the number of health workers per 1,000 inhabitants; and in terms of quality, using working conditions in the sector, mainly on the basis of wages. **Table 5** summarizes the current provision of health services in Argentina.

The guidelines produced by the WHO (2016) for the attainment of SDG3 on health and wellbeing establish the international standard to be a minimum of 4.45 skilled health workers –physicians, nurses and midwives (SHW)– per 1,000 inhabitants. In Argentina, this ratio currently stands at 6.8 SHW per 1,000 inhabitants. The need for health workers in other specialties (HWOS) is identified on the basis of a fixed proportion of this type of medical professional among the total number of physicians, nurses and midwives. According to the values proposed by the WHO (2016:11), the standard for upper middle-income countries like Argentina should be a ratio of 0.406 health workers in other specialties to skilled health workers.

► **Defining policy goals for the STC subsector**

Based on the situation in the STC subsector described above, Argentina has a level of coverage

that exceeds the targets established under SDG 3. Therefore, the SQ scenario only considers the effect of population growth. However, the minimum, average and maximum HR scenarios propose certain improvements in coverage and quality of these services.

Specifically, with regard to coverage, all the scenarios propose requiring auxiliary nursing staff to complete professional training by 2030 thereby increasing the ratio to 8.53 SHW per 1,000 inhabitants.

In terms of the quality of that coverage, the proposal made by Ilkcaracan and Kim (2019) is used as a reference, suggesting that salaries in the STC sector should be equivalent to the average salary of a worker with a university degree between the ages of 24 and 65 years. In the current situation, the difference between the salary of a university graduate and that of a health worker is 10 per cent. Therefore, this is the increase that is proposed in the minimum scenario. The average and maximum scenarios propose salary increases differentiated by profession, in order to reduce the current salary gap between physicians on the one hand and nursing and midwifery staff on the other. **Table 6** provides a summary of the proposed goals for each scenario.

► Table 5. Provision of short-term care services (2017)

Professions	Coverage (per 1.000 inhabitants)	Quality of coverage			
		Gross salary ¹	Public expenditure on health (% GDP)	Expenditure on salaries (% total health costs)	General expenditure ² (% total health costs)
Physicians	4	\$26 961.93	6.66	33	67
Midwives	0.2				
Nurses	2.6				
Health workers in other specialties (HWOS)	0.406*				
Support staff	1.8	\$20 217.96			

Notes:

¹ Gross salary is approximately 40 per cent higher than net salary; which is calculated by taking into account contributions to pensions, social security organizations, PAMI and employers' contributions. The values in the table represent the average salary for the indicated professions.

² All expenditure not attributable to salaries

* Coverage of HWOS is not per 1,000 inhabitants, but rather a fixed proportion of the total number of SHW and the number of HWOS. The coverage indicator recorded is that of the ILO baseline.

Source: prepared by the authors using the OFERHUS database (2016); public data from the Ministry of Health of the Nation; ILO, UN Women, UNFPA (2020) with data from the National Directorate for Maternity and Childhood.

► **Results of the estimation of deficit coverage in the STC subsector**

Based on the deficits in coverage and quality identified above, **Table 7** shows, for the SQ scenario and for the minimum, average and maximum HR scenarios, the number of direct jobs

required to meet the increase in coverage in the STC subsector; and the fiscal cost associated with addressing the deficits in coverage and quality identified in this subsector. The calculations of this fiscal cost were made using 2017 prices and are expressed in terms of the GDP of that year, as it is assumed that the relative

► Table 6. High Road goals for the minimum, average and maximum scenarios for the STC subsector

Minimum		Average		Maximum	
Coverage (ratio SHW per 1 000 inhabitants)	Quality of coverage ¹ (salary increase)	Coverage (ratio SHW per 1 000 inhabitants)	Quality of coverage (salary increase)	Coverage (ratio SHW per 1 000 inhabitants)	Quality of coverage (salary increase)
8.53	10 % for SHW and HWOS	8.53	No increase for physicians and HWOS + 50 % for nursing and midwifery staff	8.53	+ 50 % for physicians and HWOS + 125% for nursing and midwifery staff

Notes:

¹ For the minimum policy scenario, the diversity of income of health workers is not considered, therefore to determine the costs of care and non-care workers in the health sector, data on average monthly income is used obtained from microdata from the third quarter of 2017 by the Permanent Household Survey (PHS), according to the classification of workers proposed by the ILO-GED methodology.

Source: prepared by the authors.

► Table 7. Estimated job creation and fiscal effort needed to address the deficits of the STC subsector according to the various scenarios by 2030

Total population	Total job creation 2030–2017 (number of jobs)	Cost of increases in coverage and quality of services (differential 2030–2017, % of GDP)
	Statu-quo scenario	
	78 600	0.83 %
	Minimum scenario (High Road)	
	262 712	2.98 %
	Average scenario (High Road)	
262 712	3.36 %	
Maximum scenario (High Road)		
262 712	5.07 %	

Source: prepared by the authors.

importance of the sector for the economy will remain stable over time.

As can be seen, the SQ scenario, just like in the education subsector, does not require any considerable fiscal effort. With an investment of less than 1 per cent of GDP in the sector, the current situation can be maintained. The improvements of one of the HR scenarios will require a greater fiscal effort, of between 2.98 per cent to 5.07 per cent of GDP, depending on the scenario. That effort would also lead to the generation of a significant number of jobs, which would reach more than 20 000 jobs at various qualification levels, from skilled health workers to health workers of other specialties.

Long-term care (LTC)

Long-term care implies medical care, but it also has a non-medical component, which is the provision of support in daily activities. The target population for this care includes older adults (65+) with basic dependence and persons with disabilities with severe dependence. This population is cared for in two ways: long-term residences (LTR) and care at home.

The information on care at home comes from the National Survey on the Quality of Life of Older Persons (ENCaViAM) carried out in

► Table 8. Salary differences in LTC services (2017)

Reported	Home	Long-term residences
Monthly salary	\$8 297.6	\$15 923.54
Hourly salary	\$51.86	\$69
Average weekly hours worked	40	40

Notes: the salary corresponding to staff providing care at home was obtained by using the average income of domestic staff, calculated using the Permanent Household Survey from the third quarter of 2017. The salary of staff working in long-term residences (LTR) was obtained from the Argentine Federation of Health Workers. In both cases, the values are expressed in Argentine pesos as they stood in 2017.

2012 by the National Institute of Statistics and Census (INDEC). According to this survey, 19 per cent of older adults with basic dependence receive care at home, whether from specialized or non-specialized staff or other people. For its part, the information on the number of people in LTR is obtained by multiplying the number of LTR on the Federal Register for Health Establishments (REFES) by the average number of people in each of the LTR identified in Roqué *et al.* (2014). This calculation gives a total number of 76,601 people who live in LTR, representing 14 per cent of older persons with basic dependence⁷. It is worth noting that this number could be an underestimation, as there are LTR that do not comply with the necessary requisites to appear on the Federal Register.

Working conditions, evaluated using salary levels, vary by type of service. Table 8 summarizes this situation in 2017.

► Defining policy goals for the LTC subsector

The methodology proposed by the ILO and UN Women (2021), based on Ilkcaracan and Kim (2019), establishes that the minimum standard of people benefiting from LTC services is 12.4 per cent of the target population.⁸ Average coverage reported in Argentina is 14 per cent,

► Table 9. Minimum, average and maximum *High Road* goals for the LTC sector

Minimum		Average		Maximum	
Coverage (population receiving care)	Quality of coverage (staff per beneficiary, salary and infrastructure increase)	Coverage (population receiving care)	Quality of coverage (staff per beneficiary, salary and infrastructure increase)	Coverage	Quality of coverage (staff per beneficiary, salary and infrastructure increase)
+ 25 % beneficiaries	Staff per beneficiary: + 1-1 at home + 1-3 in LTR Salaries: + 33 % staff at home + 15 % staff in LTR Infrastructure: 0 m ²	+ 50 % beneficiaries/as	Staff per beneficiary: + 1-1 at home + 1-3 in LTR Salaries: + 33 % staff at home + 15 % staff in LTR Infrastructure: + 575 949 m ²	100 % beneficiaries	Staff per beneficiary: + 1-1 at home + 1-3 in LTR Salaries: + 33 % staff at home + 15 % staff in LTR Infrastructure: + 1 738 567 m ²

Source: prepared by the authors.

which is greater than the minimum international standard. Therefore, the SQ scenario is only guided by population increase.

The HR scenarios propose improvements to both coverage and quality. In the case of the former, a progressive increase in the population benefiting from LTC is proposed, reaching 100 per cent of the target population in the maximum scenario.

Regarding quality, taking into account the indicator of the number of people receiving care to the number of care workers in the subsector, the ratios suggested by the ILO-UN Women (2021) are applied. Thus, the number of beneficiaries per LTC staff member at home is considered to be 1:1 because of the nature of care in the home, while in LTR the suggested ratio is three people receiving care per LTR care worker.

The proposed salary increase involves standardizing the working conditions of those who provide paid care at home with those set out in the category of “attention and care of persons” in the Special Regulations for Individual Homes⁹. For those working in LTR, salaries will be standardized with salaries of hospital nursing staff.

In addition, it is necessary to expand the infrastructure in those cases where the coverage of LTR is to be extended.¹⁰ There should be 7 m² per person¹¹. This would mean that no additional infrastructure would be required for the minimum scenario, and for the average scenario an additional 575 949 m² would be required, and for the maximum scenario, an additional 1 738 567 m² adicionales.¹² Table 9 summarizes the goals for the various scenarios.

► Results of the estimation of deficit coverage in the LTC sector

Table 10 presents the results obtained for the various policy goals proposed in the Status quo and the minimum, average and maximum *High Road* scenarios For the LTC sector. The calculations were made using 2017 prices and are expressed in terms of the GDP of that year, as it is assumed that the relative importance of the sector for the economy will remain stable over time.

As can be seen, moderate fiscal effort is needed to expand LTC services in all cases. Even in the maximum HR scenario, the effort required would not exceed 1.5 per cent of GDP. If the fiscal effort needed to expand the infrastructure is added

► Table 10. Estimated beneficiaries, job creation and fiscal effort needed to address deficits in the LTC subsector, according to the various coverage scenarios, by 2030

Persons with a disability under 65 years with severe dependence + Older persons with basic dependence	Coverage of care deficits 2030-2017 (number of additional beneficiaries)	Total job creation 2030-2017 (number of jobs)	Cost of increase in coverage and quality of services (% GDP)		
			Differential 2030-2017	Infrastructure cost	Total cost
Statu-quo scenario					
	100 670	79 407	0.16 %	0.05 %	0.21 %
Minimum scenario (High Road)					
	101 295	96 978	0.30 %	0.00 %	0.30 %
Average scenario (High Road)					
	556 551	496 594	0.63 %	0.18 %	0.81 %
Maximum scenario (High Road)					
	1 467 064	1 295 828	1.49 %	0.53 %	2.02 %

Source: prepared by the authors.

to that, the total cost would increase to around 2 per cent of GDP.

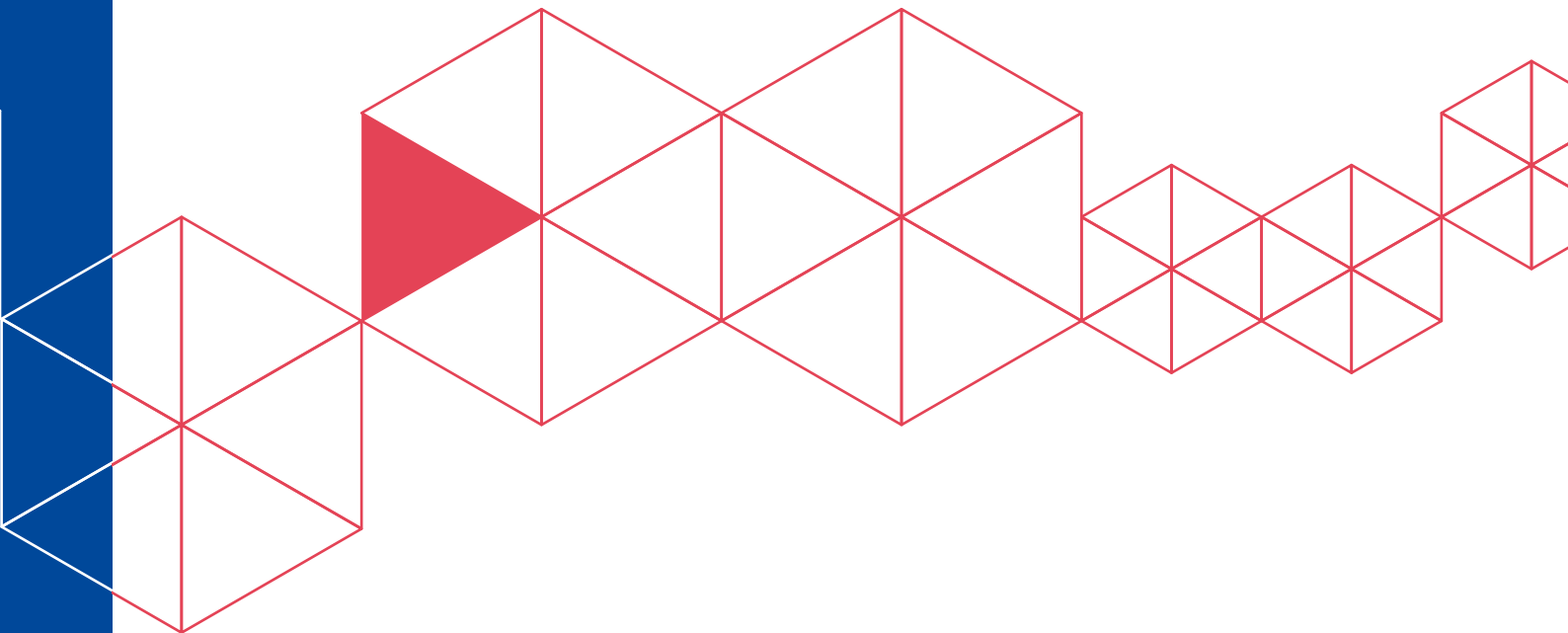
In light of the fact that the population is ageing, and given the current significant coverage deficit, this result could be advantageous in motivating public investment in the sector. Especially given that this option has the potential to generate more than 1 million jobs in the maximum scenario (even though part of the challenge is to improve the quality of existing jobs). It is important to note that these results also derive from implicit assumptions that could be reviewed in a social and political discussion about the preferred location for long-term care and quality standards in those locations.

-
- 1 The Argentine education system is federal in nature and the responsibility for providing and imparting education belongs to the State at the national level, the provinces and the CABA.
 - 2 The information available about coverage of educational services in extended school days only contains data for basic education (primary level).
 - 3 In order to establish the value for this goal, reference was made to the information provided during the Permanent Household Survey conducted in the third quarter of 2017. The data obtained indicates that average working day of people working as teachers is shorter than those of employed university graduates used as a point of reference, as the majority are working a standard school day. Therefore, in order to estimate the target teacher salary, the average income of a salaried worker who has finished a university course aged between 24 and 65 years was established, proportional to the time worked. In order to approximate gross income, the net income was increased by 40 per cent so as to take into account social security contributions: pension, social security organization and PAMI) and 23 per cent of employers' contributions (pension, social security organization, PAMI, ANSES, family allowances, National Employment Fund).
 - 4 In this aggregated analysis at the country level in 2017, no infrastructure deficits were detected that needed to be addressed with regard to minimum standards, therefore the results presented in this report are limited to understanding the investment in infrastructure required to house new beneficiaries who would seek to access care services to 2030. For a more detailed analysis in this regard, see Annex IV. However, an analysis disaggregated by province, carried out by the team from the IIEP, facilitated an understanding of the existence of infrastructure deficits in some jurisdictions, which were not visible in the aggregated analysis.
 - 5 As can be seen, the data on employment generation that appear in this and subsequent tables are different from that estimated in chapter 5 of this exercise. The differences result from the use of different sources of information. In the case of chapter 5, it was necessary to use the employment vector provided in order to maintain consistency with the existing social accounting matrix (SAM). In order to align the two stages of the work, the structure of employment in the care subsector was used for these initial estimations in order to disaggregate the care subsectors in the SAM. In any case, it is worth noting that the estimations of employment generation that appear in this and in subsequent tables are minimum values and, therefore, could be even higher, depending on the source used as a basis for the estimation.
 - 6 In the same way as for educational services, the Argentine health system is federal and decentralized in the 24 provinces and the CABA. This exercise shows a panorama at the national level, without ignoring the differences observed in coverage at the subnational level. In provinces such as Misiones, Formosa, Catamarca and Santiago del Estero, the number of skilled health workers (physicians, midwives, nurses: SHW) is below the threshold of 4.45 per 1,000 inhabitants. On the other hand, there are some jurisdictions in which that level is exceeded, the CABA is the territory with the highest number of SHW (23.07 per 1,000 inhabitants). For this reason, it is important to clarify that this exercise of expenditure presupposes that the quantities noted will remain unchanged to 2030, but that in order to mitigate the territorial inequalities, it would be necessary to redistribute these resources across the different jurisdictions.
 - 7 The number of older adults with basic dependence is calculated using population projections for 2017 and the percentage of dependence reported by the ENCaViAM (2012).
 - 8 This parameter is based on estimations from Scheil-Adlung (2015) which, ranking nine OECD countries by the full legal access to LTC support in the form of services or benefits, found a weighted average rate of coverage of the population across the nine countries of 12.4 per cent.
 - 9 Comprises non-therapeutic assistance and care for people such as people with an illness or a disability, children, teenagers or older adults.
 - 10 Forty-two per cent of older adults with basic dependence are cared for in LTR, while the remaining 58 per cent are covered by care at home, which does not require the construction of infrastructure.
 - 11 Taking into account that the majority of rooms in LTR are doubles (Roqué et al. 2014) the regulatory measurements for double rooms (14m²) is used, as specified by Gascón and Redondo (2014:54).
 - 12 For a detailed analysis of the estimated costs of investment in infrastructure for LTR, see Annex V.



5

Economic impacts and financing challenges



► **The scenarios proposed in this exercise to simulate the economic impacts by 2030 of investment in care in all cases involve an increase in gross production value (GPV) and in employment (registered paid employment, primarily for women) in the care sectors, which in turn will have a positive impact on other sectors of the economy.**

The previous chapter set out the results of estimations of existing care deficits for selected populations and the corresponding sectors, as well as the fiscal efforts required to address those deficits, according to the scenarios and goals proposed.

One option is to consider those fiscal efforts as necessary investment and to evaluate how to finance them. However, this vision is incomplete. As was mentioned previously, we are starting from the assumption that investing in care has economic implications that should be considered when evaluating the net fiscal efforts, as well as any socioeconomic gains that this investment could attain.

To that end, an input-output model or input-output matrix (IOM) and a social accounting matrix (SAM) are used to evaluate the economic implications of the investment in care, both in the macroeconomic sphere and in terms of (direct and indirect) employment generation, and their quality. This means it is possible to determine how much of the investment in care is considered “self-financing” as a result of its impact on the economy, and how much requires additional financing, as well as the impact that will be generated in other relevant areas such as employment and income.¹

Methodology and calibration

The exercise of estimating the economic impact of investing in care is aligned to the methodology suggested by Ilkkaracan and Kim (2019) together with the ILO (2019), with adaptations. These precedents implement quantity-based input-output models (IOM) in order to study the impact of various policies aimed at expanding coverage in the care sectors and, at the same time, improving

the salaries of workers in those sectors. These exercises lead to greater investments, which, ultimately, lead to an increase in the final demand of those sectors.

In this version, an alternative methodology was used that disaggregated each scenario by different aspects:

- expansion of coverage,
- expansion of infrastructure and
- salary increases.

The first two aspects were analysed using a quantity-based IOM, and the third using a price-based IOM. This is because when salaries increase in any sector of the economy, the value of labour remuneration increases and, consequently, so does the added value. This fact eventually has an impact on the costs of certain sectors of the economy, and with that, on the price of final products.

For its part, the implementation of the quantity-based IOM (both open² and closed³) facilitates an evaluation of the direct⁴, indirect⁵ and induced⁶ effects of the different scenarios under consideration. ► **Box 2, Image 2.**

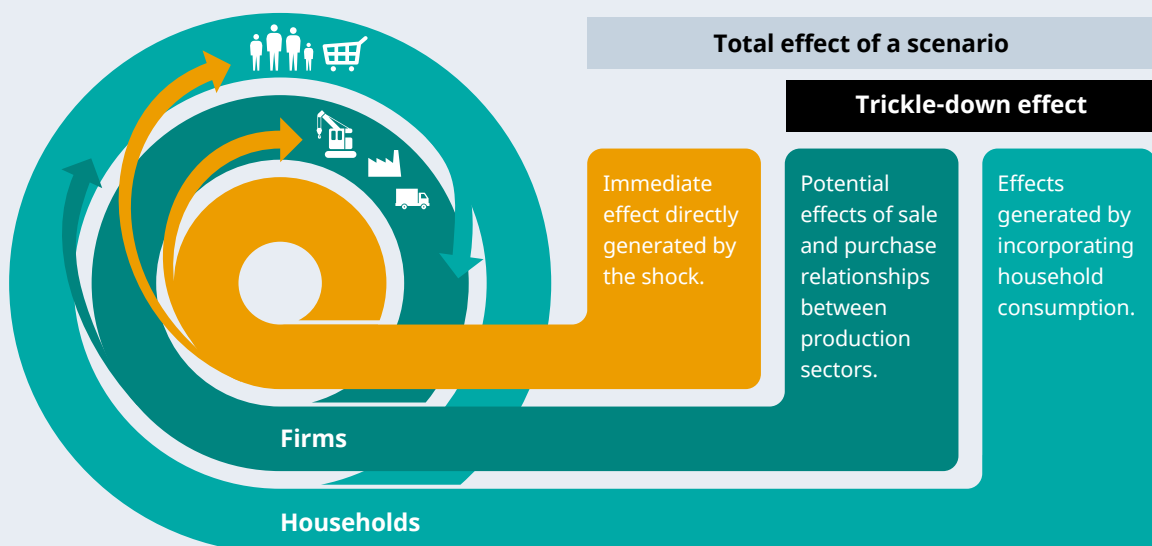
In order to build economic models that are representative of reality, it is necessary to have a significant amount of information that reflects, as fully as possible, the country or the region to be studied. At the same time, that information should be consistently integrated into a structured framework. Consistency is linked to basic budgetary restraint for each sector/agent; that is to say, to the equalization of income and expenditure for each one (Pyatt and Round 1985). A social accounting matrix (SAM) meets this need for consistency, as it represents the circular

► **Box 2. Direct, indirect and induced effects of the care investment scenarios**

Each simulated care scenario will not only have an impact on production and consequently on employment in its own sector, but, depending on its role in the economy, will also influence other sectors in the production matrix and also the final demand of households, through higher income. For example, a school infrastructure investment scenario will have its initial impact in the

construction sector (direct effect), but as this requires inputs from other sectors, it will also lead to growth and employment in the rest of the economy (indirect effect). In addition, greater income is generated for households that work directly or indirectly with the construction sector, and consequently, they will spend more on goods and services (induced effect).

► **Image 2. Diagram of the types of effects generated by an investment shock**



Source: prepared by the authors

flow of the economy in a double-entry table with income for each sector and agent shown in the rows, and their expenditure in the columns.

One of the components of a SAM is the intersectoral transactions matrix (input-output) and the added value and final demand vectors (by sector of activity). This matrix shows, in an organized way, the transactions between the various sectors of the economy; therefore, it provides an understanding of the final demand, as well as intermediate consumption (IC) and the gross production value (GPV) for each sector.

In order to meet the goals of this exercise, the matrix found in the 2017 SAM Argentina (SAM-University of Buenos Aires) is extended, and the sectors it covers are expanded to include care activities.

When adjusting the matrix, it is necessary to maintain the consistency of data. The integration of data from various sources or periods generates inconsistencies in the matrix that are corrected by applying adjustment methodologies: RAS or cross entropy (Romero et al. 2009). These methods are used to ensure that data on missing

► Image 3. Areas of the 2017 SAM by care sector

► Education	Initial education
	Primary education
	Secondary education
	Education, other
	Special education
► Health services	Short-term
	Long-term
► Community service activities	Domestic service
	Other community service activities

Source: prepared by the authors

(or out-of-date) transactions are estimated in such a way as to minimize any diversion from the true data, always maintaining consistency with the available data, in particular, data from national accounts. In this exercise, the RAS methodology is used.

The 2017 SAM originally contained 30 sectors of the economy. For this exercise, the care sectors were separated from the rest. It was also possible to isolate the domestic service sector and to estimate the value generated by unpaid work at home, given that both correspond to care work. The aspects of the subsectors identified can be found in **Image 3**. For education, the matrix considers the initial, primary and secondary levels, special education and other educational sectors, which include other types of training or instruction linked to adult education (including at a university). In the health sector, it distinguishes between STC and LTC services, both at home and in centres providing care. Finally, in the sector of community service activities, it refers to domestic service work as care work, as some LTC services are covered through domestic work. Consequently, a new version of the 2017 SAM was prepared covering a total of 36 sectors.

Unpaid work was included as a sector in the 2017 SAM, in accordance with the approach proposed

in Lofgren et al. (2020). From a technical point of view, the supply generated by this sector is absorbed in its entirety by households. Payments for these new activities are made to the households of the people who carry out this work. Therefore, the creation of this new sector would be equivalent to increasing household consumption and income by the same amount. Thus, it is possible to maintain consistency of the SAM with this methodology. It is important to mention that the methodology proposed in Lofgren et al. (2020) does not provide a framework for the incorporation of the unpaid work sector in the IOM, because this sector does not have any economic relationship with other sectors of the economy.

► **Image 3.**

Finally, the 2017 SAM (Chisari s. 2020) is associated with an employment vector, developed using ILO estimations, which is consistent with the actual labour market in Argentina in 2017. This vector, just like the original 2017 SAM, has 30 economic sectors, which is why the care sectors were opened up. In this particular exercise, it was considered that a vector would not only provide information about the number of workers in each sector of the economy, but would also supply information relating to the sex, age and occupational category of each worker.

► Table 11. Types of *shock* according to the objective and simulation methods

Improvement goal	Description	Care sectors affected	Type of scenario	Type of model used
Coverage	Increase in students/patience and in teachers/health workers	-All levels of education -Long-term health services	Increase in direct final demand in care sectors	Quantity-based IOM
Quality (P)	Increase in salaries for workers in care sectors	-All levels of education -All health sectors	Variation of the added value by increasing remuneration for labour	Price-based IOM
Quality (Q)	Increase in the building infrastructure needed in line with increases in coverage	-All levels of education -Long-term health services	Increase in final demand in sectors involved in construction	Quantity-based IOM
Growth/self-financing	Growth in the Argentine economy by an annual rate of 1.3% between 2017 and 2030.	-All.	Increase in final demand	Quantity-based IOM

Source: IIEP (2021).

Designing the scenarios

The simulated scenarios need to consider the three elements mentioned previously (coverage, infrastructure, salary increases), to which is added a type of additional shock relating to a dynamic of economic growth for all sectors of the economy for 2030. In this way, it will be possible to measure how the primary variables will evolve: production, employment and tax revenues; a product solely of economic growth. Table 11 outlines the key elements of each type of scenario.

In the scenarios to expand coverage and improve quality through infrastructure, shocks will be implemented that affect the final demand on some sectors. This type of simulation means increasing demand for a certain type of good due to a potential increase in consumption, investment or export, by a given amount. In this way, this type of simulation seeks to evaluate the impact associated with the stimulation of a sector, including in the matrix. Conversely, for the shocks to improve quality by increasing salaries and financing shocks, a price-based approach will be used.

Finally, for the scenario of economic growth and potential self-financing of projects, a similar logic was adopted to that of the quantity-based scenarios. However, the main difference is that, instead of increasing final demand in certain

sectors of the economy, an economy-wide rate of growth equivalent to 1.3 per cent annually from 2017 to 2030 is proposed. In other words, the shock of growth is equivalent to an increase in the total final demand of 19.8 per cent between 2017 and 2030 for all the sectors.

Minimum, average and maximum simulated scenarios defined, with specific parameters for each subsector of care in the previous chapter. Translating these goals for improvement in the provision of care by 2030 into quantities in the IOM consisted in causing a shock in final demand in order to generate, in direct terms, the creation of the additional jobs required to meet the coverage goal in 2030. The magnitude of that shock was determined on the basis of the existing relationship between the GPV (data obtained from the SAM) and the quantity of employment (data obtained from the employment vector) in the care sectors. In this way, the model can generate, in direct terms, the exact amount of additional employment needed for this scenario.

In the case of quality improvements by increasing salaries, the proposed percentages of salary increase were applied in this scenario to the labour remuneration in the care sectors.

Finally, the technical requirement documents for the construction projects for schools PRIN I⁸ and

► **Table 12. Total cost of implementing each scenario to 2030 (in millions of Argentine pesos, 2017)**

	Education			Short-term care health services (STC)			Long-term care health services (LTC)		
	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
Coverage	\$54 592	\$58 613	\$93 144	\$203 149	\$203 149	\$203 149	\$49 837	\$255 201	\$665 928
Infrastructure	\$253 720	\$253 720	\$387 247	-	-	-	-	\$18 703	\$56 456
Salary increase ¹	\$60 735	\$60 735	\$123 935	\$9 860	\$18 673	\$78 546	\$5 013	\$5 013	\$5 013
Total	\$369 047	\$373 068	\$604 326	\$213 009	\$221 822	\$281 695	\$54 850	\$278 917	\$727 397
Percentage of GDP	3 %	4 %	6 %	2 %	2 %	3 %	1 %	3 %	7 %

Nota:

¹ The cost of salary increases can vary depending on how the salary increase element is implemented.

Source: IIEP (2021).

dwellings FONAVI 2017⁹ were used as a reference for the shocks to expand infrastructure. Thus, it was possible to establish which sectors in the 2017 SAM were involved in construction processes.

Table 12 contains the costs of each project based on the parameters proposed in the previous chapter, and the data from the 2017 SAM and the satellite employment account used in this study. It is important to clarify that the values reported in the final row of **Table 12** show the total costs of the salary increase that would allow the quality goals to be attained in 2030. The timing of the implementation of that salary increase will produce variations in the financing requirements on the State. It will be substantially more costly to apply this total salary increase from 2017 and to maintain that level year on year to 2030, than if the increase is implemented gradually until the goal is met in 2030. In the next section (**Table 14**) the increase in salary costs in two implementation schemes are presented to prove that the timing of the policy is relevant in terms of the financing needs for these scenarios that have important quality components.

Results

All the scenarios proposed in this study involve an increase in the gross production value (GPV) and in employment in all sectors of the economy and, in particular, in the care sectors. While the majority of investments are directed towards the care sectors, the positive effects on the rest of the economy are attributable to the indirect and induced effects. The scenarios with higher employment generation

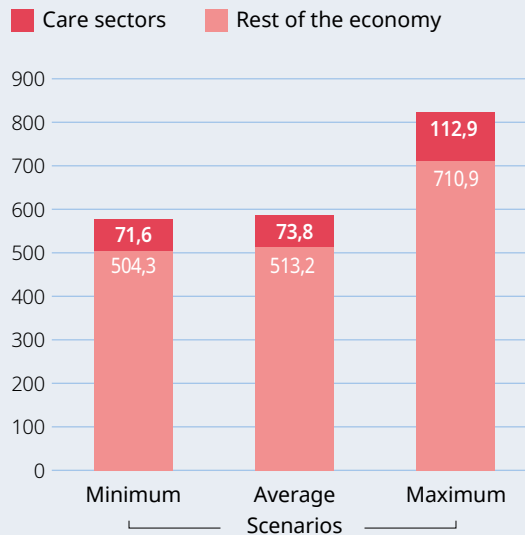
and a greater increase in GPV are those that seek a greater investment in increasing coverage and expanding infrastructure.

For the education sector, addressing the deficits in the coverage and the quality of the services could lead to an increase in GPV of close to 600 billion Argentine pesos¹⁰ in 2030, in the minimum and maximum High Road scenarios. However, the maximum scenario involves a more significant increase in total GPV, which would reach a value of approximately 824 billion Argentine pesos. This is due, on the one hand, to the fact that the maximum scenario in the education sector assumes a greater investment in infrastructure that generates a more significant increase in GPV in those sectors involved in the construction of education infrastructure. On the other hand, higher investment in both infrastructure and coverage lead, in turn, to more notable indirect and induced effects, generating a greater increase in GPV in the economy. However, regardless of the type of scenario, the contribution of the care sectors to the total increase in GPV is equivalent to 12 per cent. ► **Image 4, Panel A.**

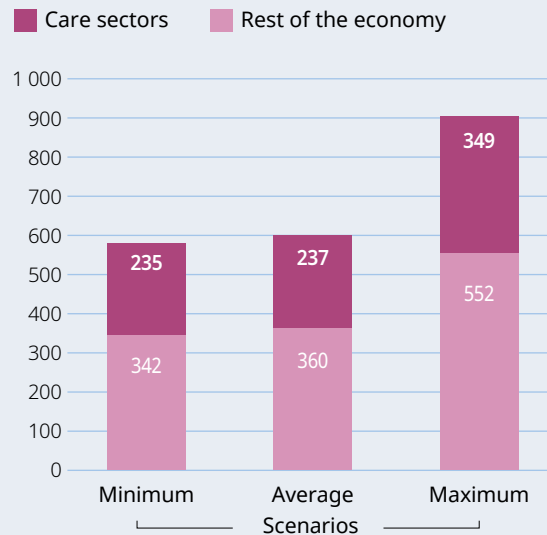
In terms of employment creation, addressing the deficits in the education sector would lead to a total estimated increase in employment of 600 000 jobs in the minimum and average scenarios; which is estimated could exceed 901 000 jobs in the maximum scenario. Therefore, similar to the observations made regarding the GPV, the more significant total increase in employment in the maximum scenario is due to the same reasons provided for the increase in GPV.

► **Image 4. Increase in GPV and employment in the various policy scenarios in the education sector**

► **Panel A - Increase in GPV**
In billions of pesos, 2017



► **Panel B - Increase in employment**
In thousands of jobs



Source: prepared by the authors

Concerning the employment increase, 40 per cent of the jobs created by these policies targeted at the education sector are generated in the care sectors. ► **Image 4, Panel B.**

Turning to the short-term care sector, it is estimated that there would be an effect in terms of an increase in GPV and employment —both for the care sectors as well as the rest of the economy— that is lower than that seen regarding the policies for the education sector.

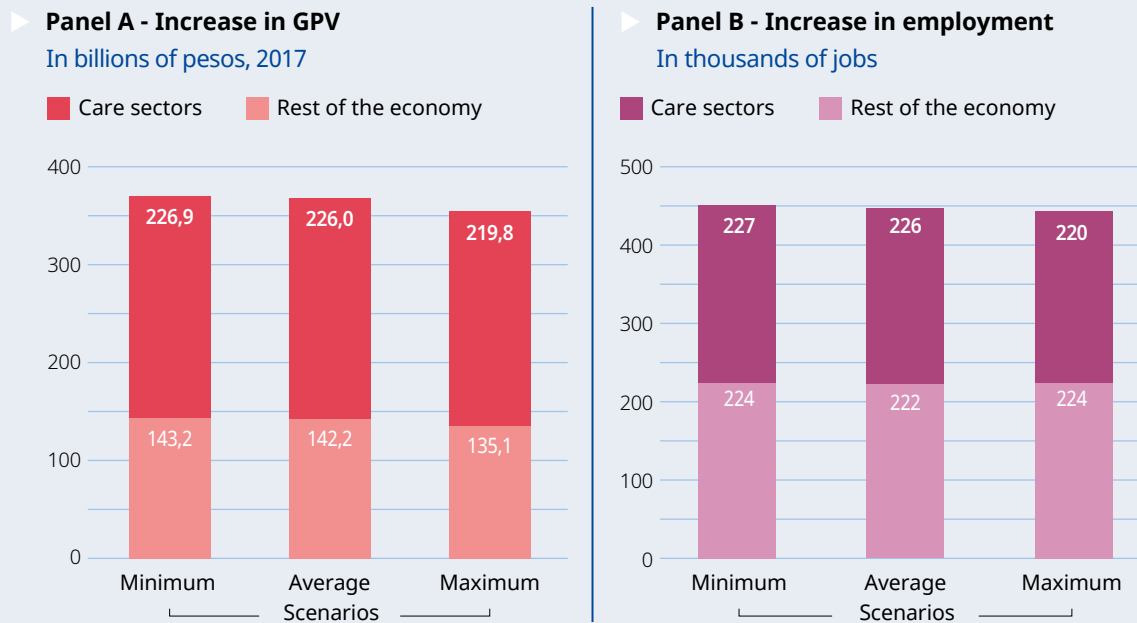
In this regard, the increase in GPV associated with the policies proposed for the STC sector could reach 370 billion Argentine pesos in the minimum scenario, decreasing to just under 355 billion Argentine pesos in the maximum scenario. This in turn translates into an increase in employment that is estimated to reach 450 000 jobs in the minimum scenario, or the lower number of 440 000 jobs in the maximum scenario (**Image 5**). This lower impact in terms of GPV and employment as progress is made in scenarios that seek to improve coverage and quality of health services is explained by the shrinking effect associated with the salary increase that is provided for in the average and maximum scenarios.

However, the policies for the STC sector produce lower indirect and induced effects on the economy when compared with the policies proposed for the education sector, giving rise to a higher relative weight of the direct impact on the care sectors. Specifically, 61 per cent of the increase in GPV associated with the STC policies correspond to the care sectors, a percentage that is stable across all the scenarios. Similarly, the share of the care sectors in the total number of jobs generated by these policies in the health sector reaches 50 per cent.

Finally, concerning the policies for the LTC sector, there are large fluctuations in the results depending on the scenario under consideration. Specifically, the increase in GPV estimated for this type of policy varies from just under 94.5 billion Argentine pesos in the minimum scenario, to in excess of 1.3 trillion Argentine pesos in the maximum scenario. Furthermore, the increase in employment is estimated at 147 000 jobs in the minimum scenario, while it could exceed 2 million jobs in the maximum scenario. ► **Image 6.**

In this regard, the results of the policies aimed at the LTC sectors show a similar dynamic to those

Image 5. Increase in GPV and employment in the various policy scenarios in the short-term care sector



Source: prepared by the authors.

noted for the education policies. Specifically, as scenarios are considered in which the level of expenditure is higher, then the variations in GPV and employment generation across the whole economy are also more significant. From technical point of view, this is due to the fact that this type of policy assumes, predominantly, an increase in coverage.

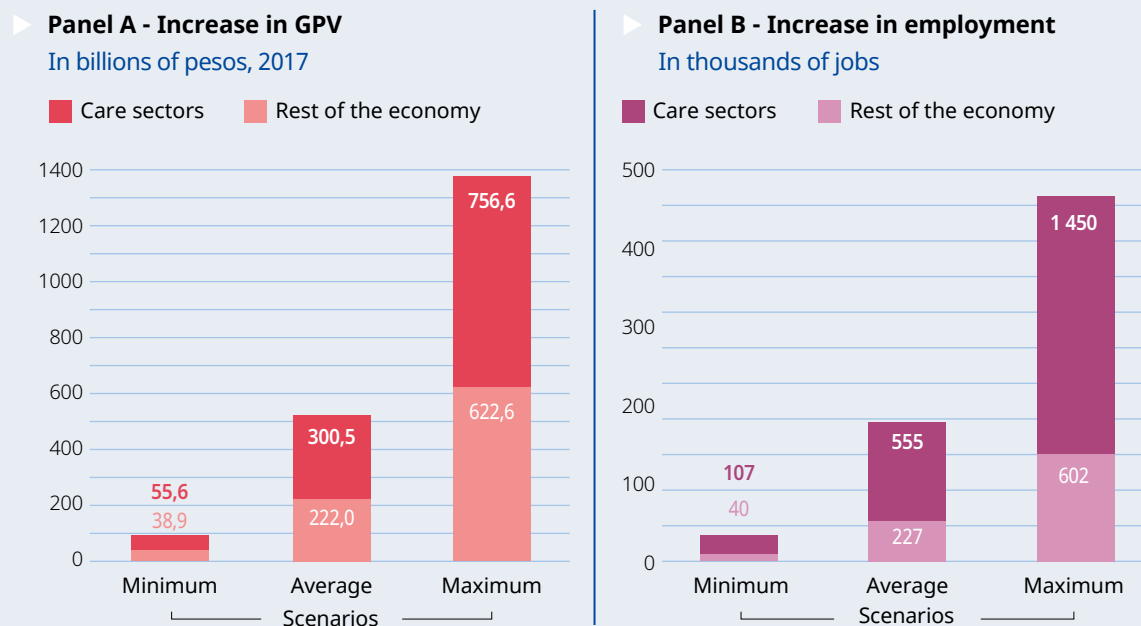
With regard to the share of the care sectors as part of the total, all scenarios assume a share that is equivalent to 57 per cent in the increase in GPV. Similarly, 70 per cent of jobs generated by these policies correspond to the care sectors.

Image 7 shows the capacity for annual self-financing for each scenario. The annual cost of a project depends crucially on how the salary increase is implemented. Although considering a gradual increase in salaries until 2030 provides for more annual financing options, all the scenarios demonstrate that it will be necessary to find alternative ways to cover the financial cost of the scenarios under consideration here.

The analysis of the composition by sex of the jobs generated in each policy scenario shows that the impact in terms of employment creation will benefit women to a greater extent than men. Specifically, 53 per cent of the jobs generated by policies in the education sector will be filled by women. This proportion increases to 58 per cent in the case of employment created by policies for the STC sector, and exceeds 65 per cent for the jobs created by the policies in the LTC sector (Image 8). This higher proportion of women can be explained by the weight of direct employment in the care sectors, which are primarily feminized, in the total employment generated by the policies for investment in care.

Finally, the analysis of the generation of jobs by occupational category shows that the larger number of jobs created will be registered paid jobs, although with differences depending on the sector targeted by the care policies. For policies aimed at the education sector, 62 per cent of total employment generated and 86 per cent of jobs created in the care sectors, would be registered paid jobs. These percentages decrease to

► Image 6. **Increase in GPV and employment in the various policy scenarios in the long-term care sector**



Source: prepared by the authors.

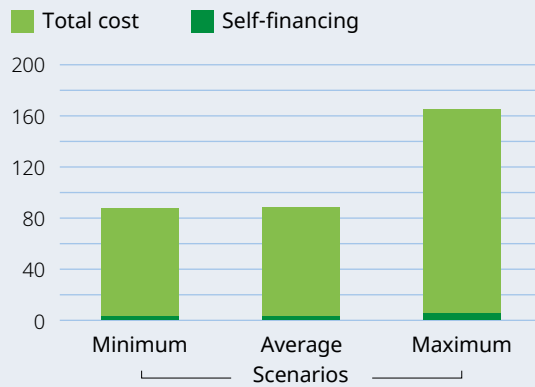
46 and 48 per cent, respectively, in the case of employment generated by policies targeting the LTC sector. Moreover, the new jobs will be filled, primarily, by people older than 24 years, with no significant differences in the results of the policies implemented in each sector. This phenomenon is not only verified in the employment generated in the care sector: around 95 per cent of jobs are filled by people older than 24 years, but also in jobs generated by care policies across the economy as a whole. ► **Image 9.**

On the basis of the information provided thus far, one benefit of this type of scenario is the generation of formal employment with overrepresentation of women, which leads to a reduction in the wage gap between men and women.

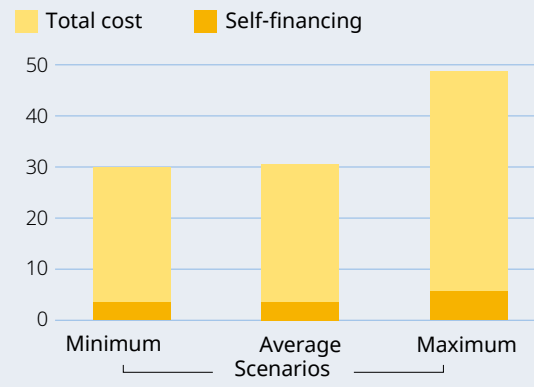
Image 7. Annual costs and self-financing of policy scenarios proposed for each care sector

Panel A. Education sector

Salary increase since 2017
In billions of pesos, 2017

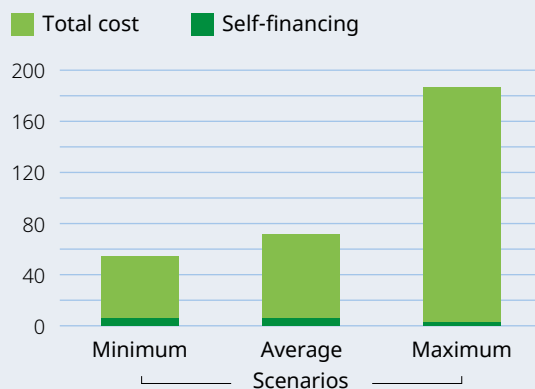


Gradual salary increase to 2030
In billions of pesos, 2017

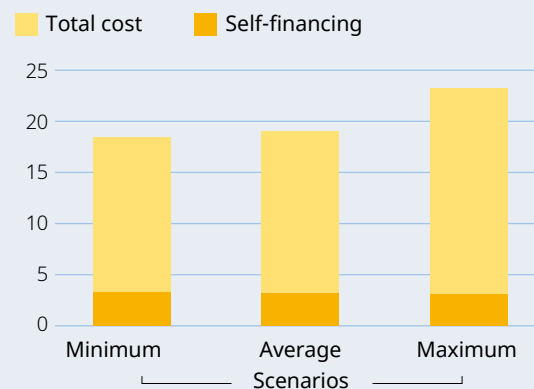


Panel B. Short-term care sector

Salary increase since 2017
In billions of pesos, 2017

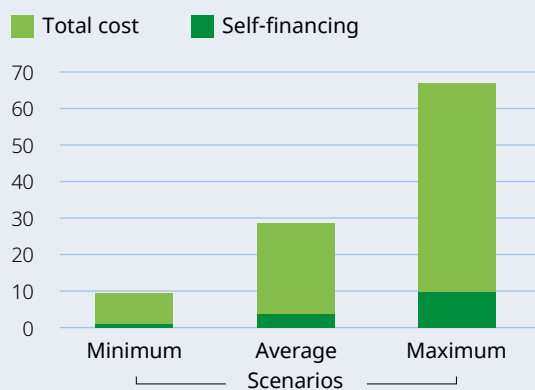


Salary increase to 2030
In billions of pesos, 2017

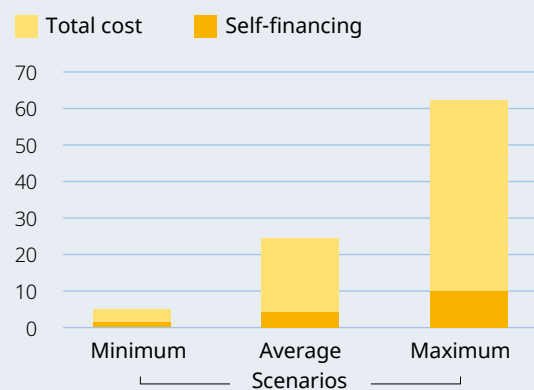


Panel C. Long-term care sector

Salary increase since 2017
In billions of pesos, 2017



Salary increase to 2030
In billions of pesos, 2017

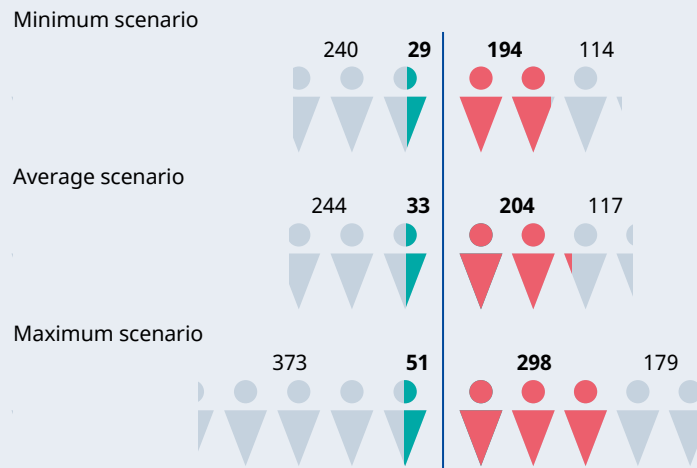


Source: prepared by the authors.

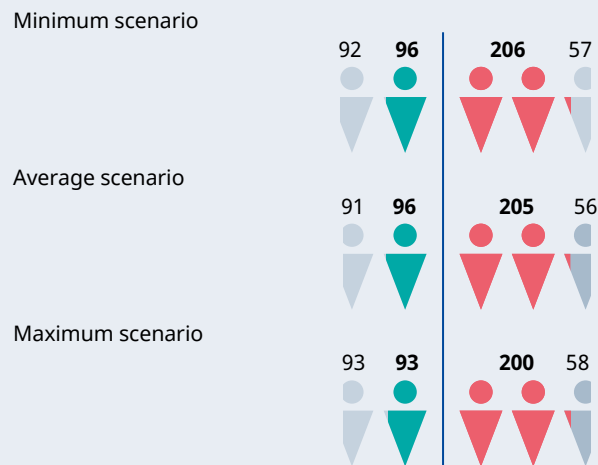
Image 8. Composition by sex of the employment generated in relation to the policy scenarios proposed for each of the care sectors

Care sectors: ■ Men ■ Women | ■ Rest of the economy In thousands of jobs

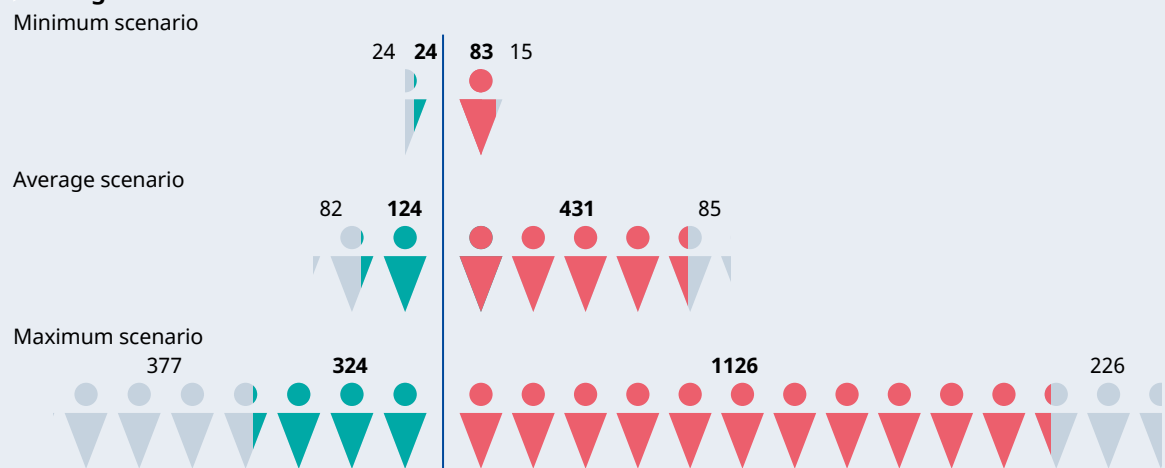
Education sector



Short-term health sectors

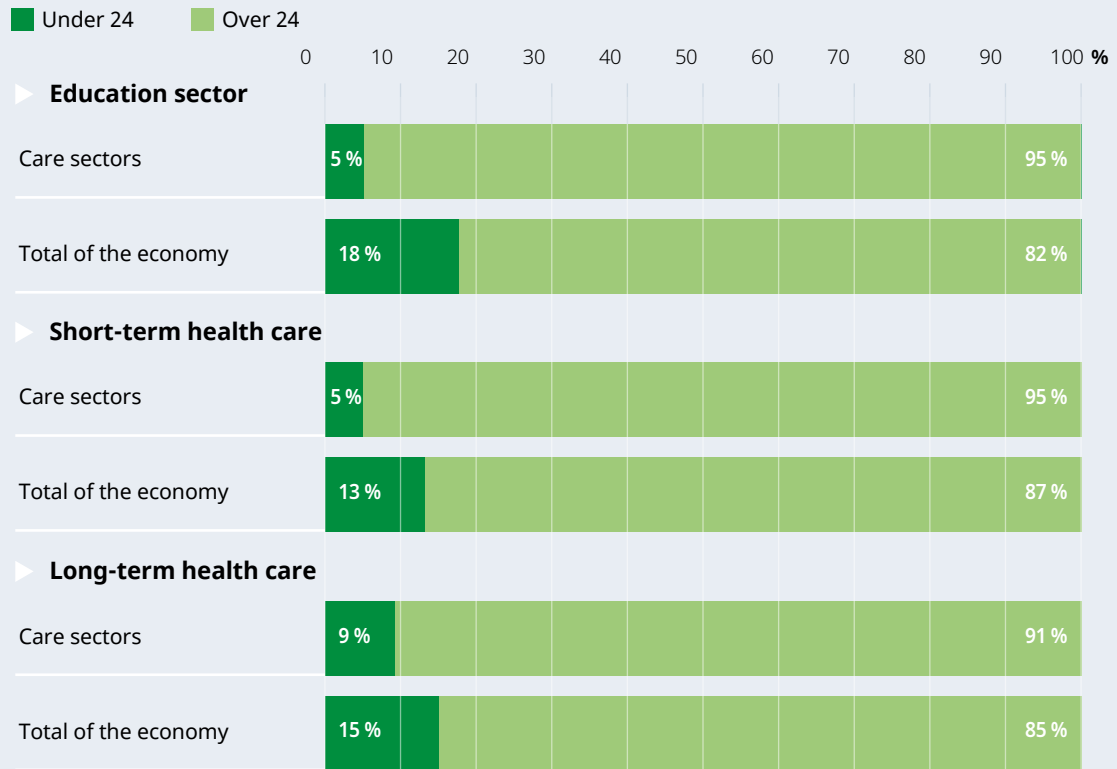


Long-term health sectors



Source: prepared by the authors.

► Image 9 A. Employment generation by age and by sector



Source: prepared by the authors.

Economic growth and self-financing

Although all the scenarios presented thus far are designed for the period to 2030 under the assumption of potential population growth, they do not include a dynamic of economic growth. Therefore, it is relevant to include the latter as a baseline for the period 2017–2030. This assumption is important for the analysis of feasibility and financing of care scenarios.

In this regard, an additional base scenario is added in which the economy grows by 1.3 per cent annually (that is to say, 19.8 per cent between 2017 and 2030). One of the reasons why it is important to consider economic growth to 2030 is the potential growth in demand faced by the factors accompanied by greater employment creation.

Consequently, it is possible that some of the coverage goals proposed for the scenarios

mentioned above will be covered without the need for additional investment. Furthermore, taking into account economic growth would imply a potential increase in tax revenues collected by the State. Thus, it would be possible to have more resources to finance the investment scenarios in care sectors even without the need for tax reform.

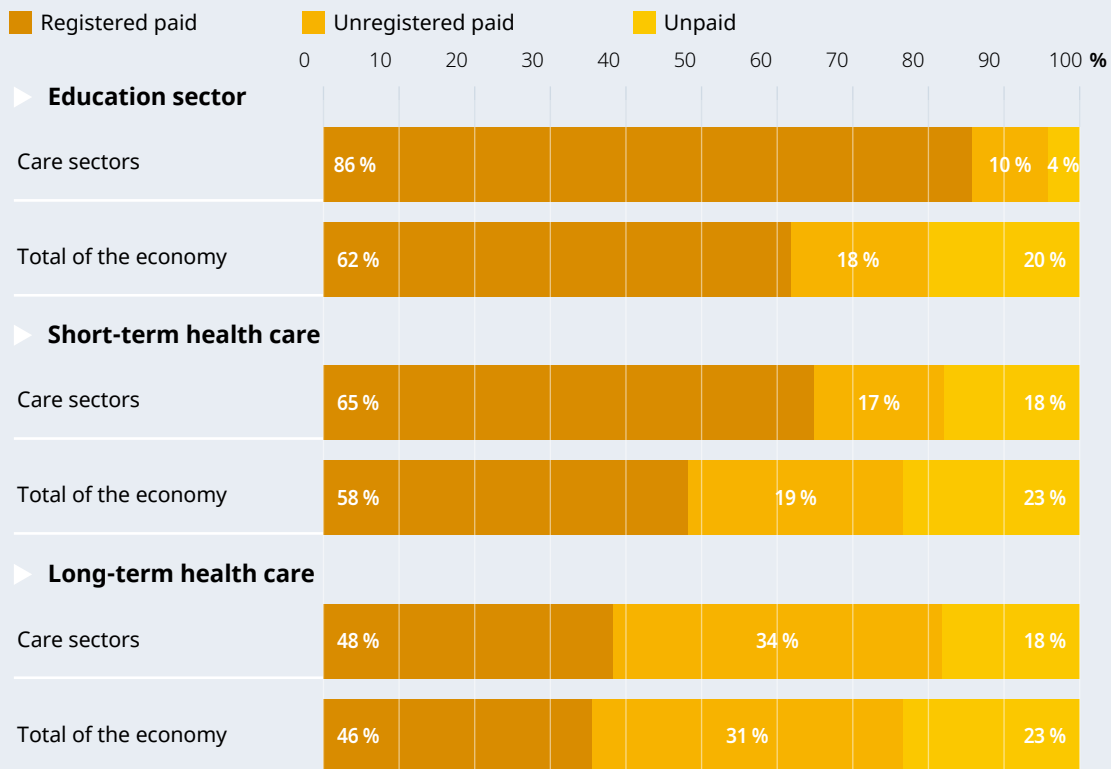
Below are the results of the main economic aggregates of this baseline simulation to 2030, without taking any policy scenario into account.

► Image 10.

Thanks to the growth in the economy to 2030, tax revenues will also increase. Table 13 shows what the additional cumulative income would be to 2030 and in annual terms for the economy as a whole and for the care sectors.

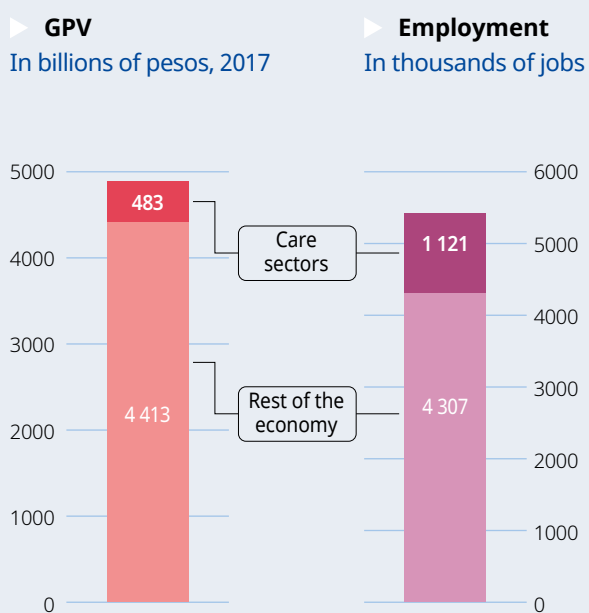
Considering this variable as part of the analysis is particularly important, because part of the

Image 9 B. Employment generation by occupational category and by sector



Source: prepared by the authors.

Image 10. Increase in GPV and employment resulting from economic growth to 2030



Source: prepared by the authors.

Table 13 - Evolution of income resulting from economic growth (in millions of Argentine pesos, 2017)

	Growth scenarios 2017-2030	
	Total of the economy	Care sectors
Increase in income 2017 to 2030	675 637	38 177
Increase in annual income	44 313	6 963

Source: prepared by the authors.

► **Table 14. Percentage of additional tax revenues resulting from economic growth that will be used to finance each scenario**

	Education scenarios			Short-term care scenarios			Long-term care scenarios		
	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
Salary increase since 2017	179 %	179 %	345 %	48 %	69 %	207 %	18 %	48 %	107 %
Gradual salary increase	52 %	52 %	85 %	27 %	28 %	38 %	7 %	37 %	96 %

Source: prepared by the authors.

tax revenue would be allocated to financing the scenarios without needing to modify the current tax structure. In order to have a better understanding of this, **Table 14** shows what percentage of annual tax revenue (of the whole economy) should be used to finance each scenario. 11

The results suggest that considering a schedule for increasing salaries from 2017 implies fiscal efforts greater than the resources that the very dynamics of job creation and stimulating demand would generate. Percentages above 100 per cent indicate that more than the tax revenue generated by the growth in order to finance the education scenarios and the maximum scenarios for the short- and long-term care sectors. Conversely, assuming a gradual increase in salaries (a linear schedule of increases that is proportional from year to year), the projects will be able to be financed on an annual basis without the need for a tax increase. This result is encouraging, as it addresses the concerns regarding the potential shrinking effect that the implementation of new taxes could cause, as well as the political economy challenges posed by any type of tax reform.

Likewise, as stated previously, introducing the possibility of economic growth generates additional jobs in the care sectors without the need for significant investments. In this way, it is possible that the expenditure for each scenario to 2030 could be lower than those reported previously.

Impact on unpaid work

The creation of employment in the care policy scenarios also have repercussions on unpaid work. Using the methodology proposed by Lofgren et al. (2020), the results relating to potential changes in the number of people in unpaid work are outlined.

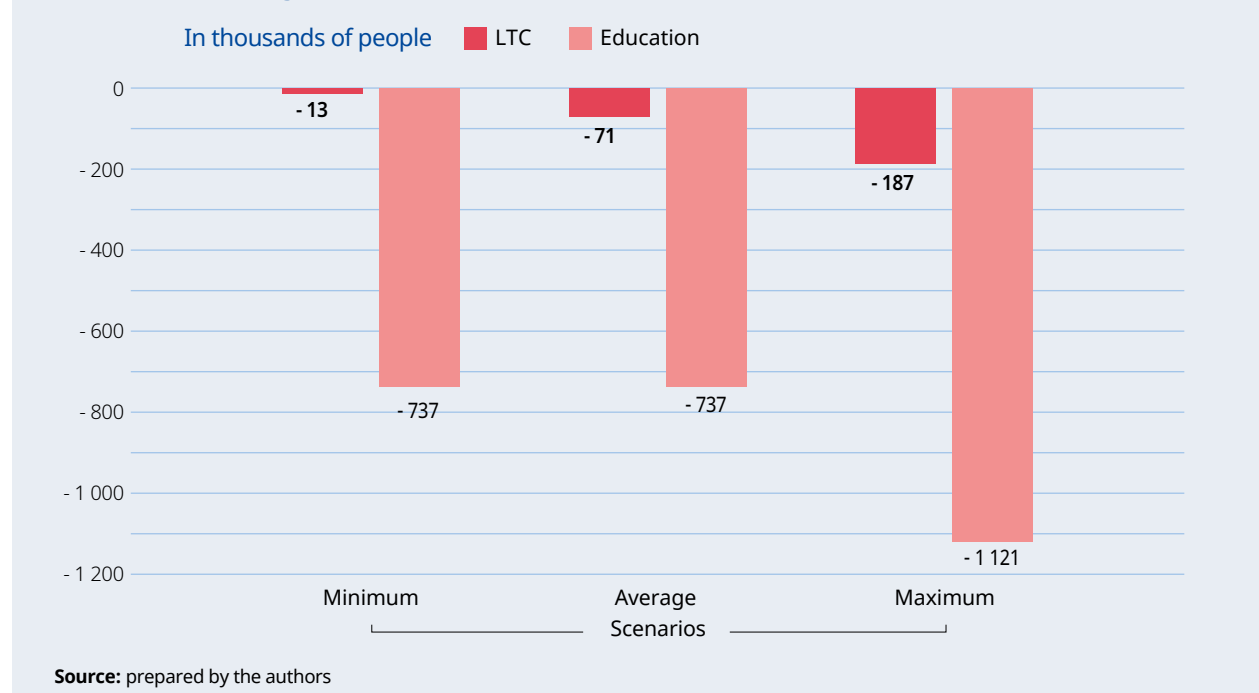
In order to determine the number of people who would enter the labour market in each scenario, the individuals requiring care who would join formal systems thanks to the increased coverage are considered. As a result of their incorporation into those systems, people responsible for providing unpaid care would have the time they needed to offer their services on the labour market. However, only the scenarios aimed at improving the education and long-term care sectors will generate changes in the number of people carrying out unpaid work, while the policies directed towards the short-term care sector would not have an impact in this regard.

In this context, the education sector would be the one that would absorb the largest number of people who today are in unpaid work and who would enter the labour market thanks to the policies proposed to improve care services. Furthermore, more than half of these people would be women, regardless of the scenario.

► **Image 11.**

With regard to the policies aimed at the education sector, the results obtained indicate

► Image 11. **Reduction of people dedicated to unpaid care work in the education and long-term care service sectors**



that the maximum scenario is the most successful in reducing the number of people in unpaid work. This is because such a scenario proposes increasing enrolment by including 50 per cent of primary school children in all-day schooling. As a result, this scenario could lead to parents or tutors whose children attend all-day schooling having more time. Thereby reducing to a greater extent, the number of people in unpaid work.

On the other hand, for the long-term care scenarios, the results indicate, once again, that the maximum scenario would generate the greatest reduction in unpaid work. Specifically, 186 346 people would be freed from unpaid work as a result of expanding the coverage of the sector. On the other hand, the minimum and average scenarios will lead to a reduction of 12 866 and 70 693 unpaid workers, respectively. In the same way as in the education scenarios, the logic behind that phenomenon lies in the fact that by implementing this type of policy, those who receive

care by a family member would now receive it from a worker from within the sector (either at home or in an institution).

Another important aspect for the evaluation of this type of policy relates to the number of people who, freed from the need to work as an unpaid carer, enter the economically active population (EAP). These results were obtained using a methodology based in considering that a fixed percentage of people freed from unpaid work would enter the EAP. That percentage was calculated using data from UNICEF, FLACSO and CIPPEC (2016) and is 38 per cent.


For all the scenarios, the number of people entering the EAP is higher among women than men.

► Image 12. Men and women entering the economically active population (EAP) from the education and LTC service sectors



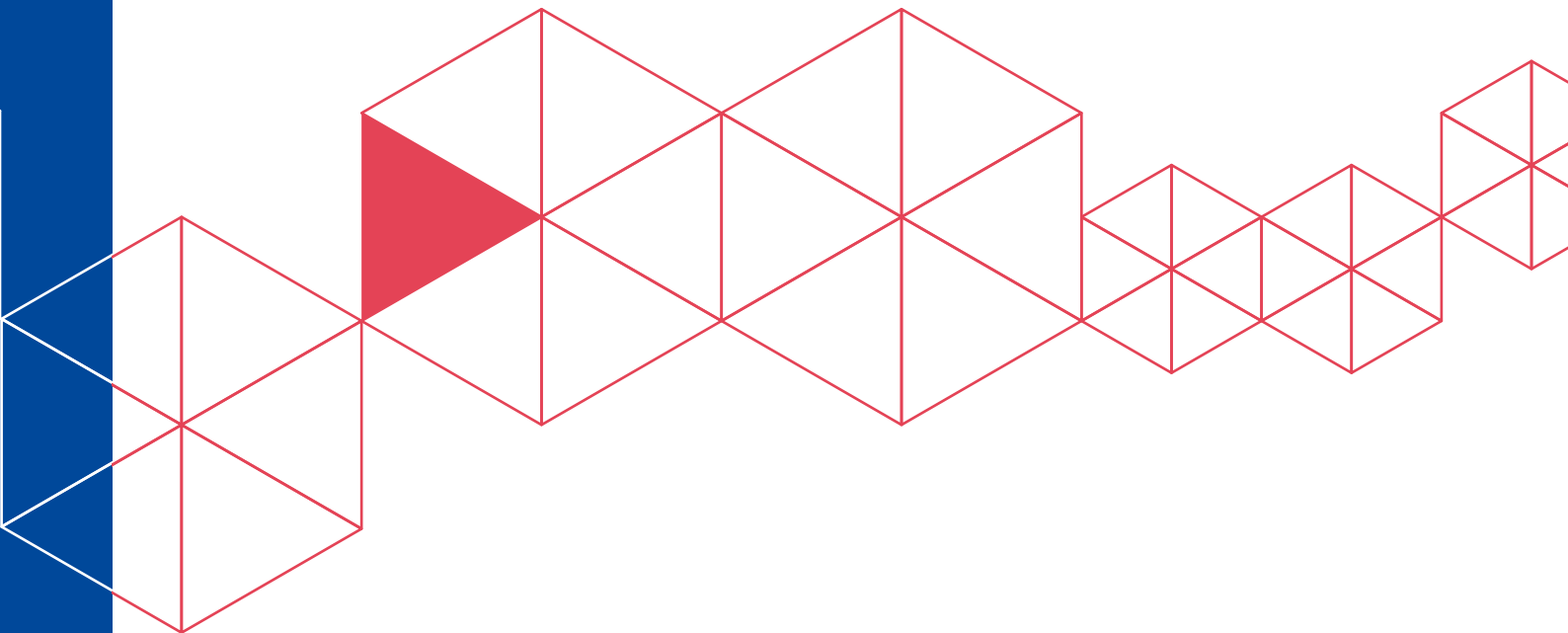
Source: prepared by the authors

- 1 The full development of this exercise, carried out by the team at the IIEP, can be seen in Ramos et al. (2021).
- 2 Refers to those IOM where household income and consumption are considered to be exogenous.
- 3 Refers to those IOM where household income and consumption are considered to be endogenous.
- 4 Variations (both positive and negative) verified in a particular sector, results of shocks in demand in this sector.
- 5 Variations (both positive and negative) verified in a particular sector, results of shocks in demand in other sectors. This effect is caused by the presence of production chains.
- 6 Variations (both positive and negative) verified in a particular sector, resulting from variations in household consumption.
- 7 Published in the series of working documents IIEP of the Faculty of Economic Sciences of the UBA (Chisari et al. 2020).
- 8 Announcement PRIN I. <https://www.argentina.gob.ar/educacion/convocatorias/aviso-licitacion-prini-i/convocatoria-i>
- 9 Construction costs of dwellings FONAVI. <http://www.copaipa.org.ar/costos-de-la-construccion/>
- 10 This amount, as well as those that follow corresponding to values quoted in this document, are stated in Argentine pesos, as at 2017.
- 11 These percentages consider the part of the expenditure in each scenario that is not self-financed.



6

Conclusions



► **The exercise presented here seeks to contribute to the current discussions about how to make progress in consolidating an integrated structure of care policies focusing on the provision of public care services.**

From the work done it is possible to reach some conclusions on:

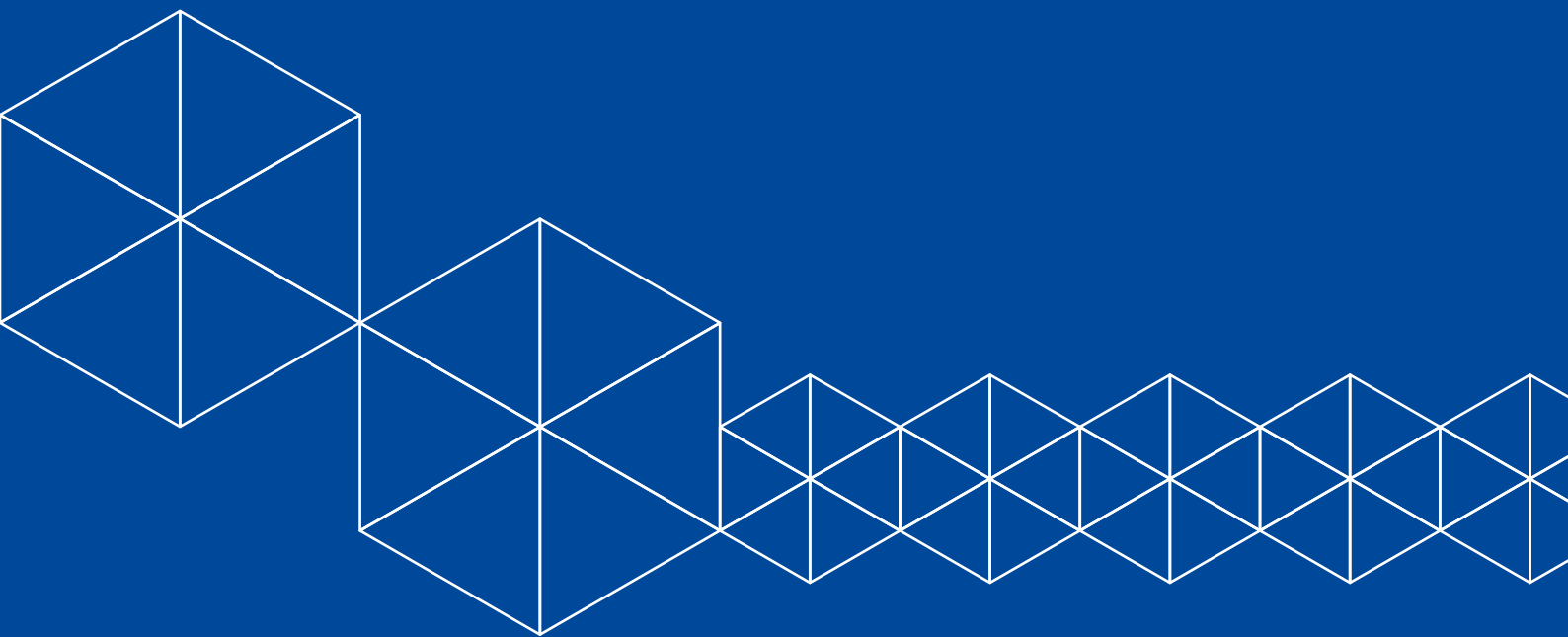
- **the importance of having this type of evidence that provides an approximation of the magnitude of both the care deficits that need to be addressed and the fiscal efforts that would be required, as well as the economic impacts that could, among other things, allow those same efforts to be mitigated.**
- **the need to continue working on the generation and systematization of information to enable the continued adjustment and update of estimations.**
- **the potential that the care sector has as an economic sector. The results obtained highlight the significant generation of employment that investment in the sector could cause (directly, as well as indirect and induced effects).**
- **in turn, investment in the sector, as presented in the analysis of the economic impacts, which facilitates the generation of primarily female employment, and thus reduces the gender gap both in participation in the labour market, as well as in terms work-related income.**

If you add to these conclusions the earlier point that the transformation of the social organization of care can break trends that reproduce inequality, the challenge of investing in care becomes a policy objective that is desirable and urgent.

The results are also auspicious in terms of the discussion on how to finance the required fiscal efforts. First, because proposing different scenarios ensures that strategies outlining gradual improvements are fiscally sustainable in the medium and long term. Second, because if the assumption of economic growth is taken into consideration in the estimations, the fiscal efforts become more attainable. Third, because according to the scenarios, the fiscal efforts would not be as significant; and in those where they are, alternatives could be sought that could be implemented in a gradual manner.

In all cases, making progress in the expansion and consolidation of rights brings with it a discussion about the generation and use of resources, a debate that, beyond the care agenda, is necessary in terms of gender and distributive justice. We hope that the evidence produced by this study will enable doors to be opened to discussion and will encourage political commitment to change.

Annexes



► Annex I. Data sources

Service		Indicators	Type and source of data	Observations
Early Childhood Attention and Education	Non-formal	<ul style="list-style-type: none"> - Number of early childhood spaces by type of service and modality -Number of children by age and school grade -Teaching and facilitator positions, in the classroom -Management and support staff positions by space -Pupil-facing hours -Staff salary -Types of contract and working conditions in child development centres 	<p>Secondary data sources: 2018 Annual Report: Early Childhood: supporting upbringing by the Ministry of Social Development of the Nation.</p> <p>Tertiary data sources: Rozengardt (2014, 2017, 2020). Marzonetto (2016, 2017). Rodríguez Enríquez and Marzonetto (2017, 2015). Lovet and Minujín (2017). FLACSO and UNICEF (2020).</p>	<p>Publicly available information is presented in an aggregated manner using tertiary information.</p> <p>Staff payroll data in these spaces was not found, only information regarding trained facilitators, which led to assumptions being made on the basis of regulatory standards in order to estimate the deficit in the sector and the costs associated with teachers (including facilitators and workshop leaders).</p>
	Formal	<p>Ratio of students per teacher</p> <ul style="list-style-type: none"> -Private education sector -Public education sector <p>Using indicators:</p> <ol style="list-style-type: none"> 1.Students by cycle and year of study according to political/territorial division (disaggregated for cycle: pre-school and kindergarten – ages 3,4,5). 2.Sections by cycle, year of study and type of section according to political/territorial division) 3.Teaching positions by attachment to functional organic space, cycle and educational function (management, student-facing teacher, support, 1:1 staff) according to political/territorial division) <p>Working conditions</p> <p>Indicators:</p> <ol style="list-style-type: none"> 1.Teaching hours by attachment to functional organic space, cycle and management sector according to political/territorial division. 2.Gross salary and net salary of grade teacher with 10 years of experience (salary of reference). 	<p>Primary data source: Educational Statistics Yearbook. Directorate of Educational Evaluation and Information, Ministry of Education of the Nation (DINIECE).</p> <p>Secondary data source: Indicative Report of Teacher Salary. Ministry of Education. General Coordination of the Study of Costs of the Education System (CGESCSE).</p> <p>Tertiary data source: Steinberg and Scasso (2019).</p>	<p>Available information to support building the required indicators. Latest available source: <i>2019 Educational Statistics Yearbook</i>.</p> <p>Latest available source: <i>Indicative Report of Teacher Salary</i>, June 2020.</p> <p>Possible to disaggregate data at the provincial level and by zone (urban-rural) for later stages.</p>

Service		Indicators	Type and source of data	Observations
Care services at home	Paid	<p>Coverage Number of households with children up to six years of age who hire workers for work in individual homes.</p> <p>Working conditions -Average salary of workers in individual homes. -Cost of social security registration. -Percentage of workers registered.</p>	<p>-Permanent Household Survey (EPH). Household survey. Block VII. Organization of the household. - National Survey on Social Structure (ENES) (2015). Research Programme on Contemporary Argentine Society (PISAC), Ministry of Science, Technology and Innovation (MINCyT). - Survey on Employment Conditions, Labour and Health, and Security (ECETSS) (2018).</p> <p>Quantitative secondary sources taken from literature in that field.</p>	<p>The information contained in the block of the EPH does not distinguish between domestic work and care work. The cut off of households having a child of up to six years of age assumes that people who are working at home up to that point are undertaking care work.</p> <p>In any case, the block does not have a specific sample design and the quality of the information is not verified. It is used as an approximate estimation and calibrated using information obtained from the ENES (2015) and ECETSS (2018) surveys.</p>
	Unpaid	<p>Coverage Time spent providing care in households with children under six years of age.</p>	<p>-Permanent Household Survey (EPH). Module on Unpaid Work. - National Survey on Social Structure (ENES) (2015). PISAC MINCyT.</p>	<p>The EPH module is from the year 2013. No source of information is available to update this data, but given that changes in how people use their time occur very slowly, it is considered to be an acceptable approximation, beyond the methodological limitations of the instrument. This information is complemented by that provided by the ENES survey.</p>
Primary Education		<p>Ratio of students per teacher -Private education sector -Public education sector Using indicators: 1. Students by year of study according to political/territorial division. 2. Service units by academic structure according to political/territorial division. 3. Service units of extended/all-day schooling and students in those schools according to political/territorial division. 4. Teaching positions by attachment to functional organic space and educational function (management, student-facing teacher, support, 1:1 staff) according to political/territorial division.</p> <p>Working conditions Indicators: 1. Teaching hours by attachment to functional organic space and management sector according to political/territorial division. 2. Gross salary and net salary of grade teacher with 10 years of experience (salary of reference). 3. Level of registration of workers in the sector.</p>	<p>Primary data source: <i>Educational Statistics Yearbook</i>. Directorate of Educational Evaluation and Information, Ministry of Education of the Nation (DINIECE).</p> <p>Secondary data source: <i>Indicative Report of Teacher Salary</i>. Ministry of Education. General Coordination of the Study of Costs of the Education System (CGESCSE).</p>	<p>Available information to support building the required indicators.</p> <p>Latest available source: <i>2019 Educational Statistics Yearbook</i>.</p> <p>Latest available source: <i>Indicative Report of Teacher Salary</i>, June 2020.</p> <p>Possible to disaggregate data at the provisional level and by zone (urban-rural) for later stages.</p>

Service	Indicators	Type and source of data	Observations
<p>Secondary Education</p>	<p>Ratio of students per teacher -Private education sector -Public education sector Using indicators: 1. Students by year of study according to political/territorial division. 2. Service units by academic structure according to political/territorial division. 3. Service units of extended/all-day schooling and students in those schools according to political/territorial division. 4. Teaching positions by attachment to functional organic space and educational function (management, student-facing teacher, support, 1:1 staff) according to political/territorial division).</p> <p>Working conditions Indicators: 1. Teaching hours by attachment to functional organic space and management sector according to political/territorial division. 2. Gross salary and net salary of grade teacher with 10 years of experience (salary of reference). 3. Level of registration of workers in the sector.</p>	<p>Primary data source: <i>Educational Statistics Yearbook</i>. Directorate of Educational Evaluation and Information, Ministry of Education of the Nation (DINIECE).</p> <p>Secondary data source: <i>Indicative Report of Teacher Salary</i>. Ministry of Education. General Coordination of the Study of Costs of the Education System (CGESCSE).</p>	<p>Available information to support building the required indicators.</p> <p>Latest available source: <i>2019 Educational Statistics Yearbook</i>.</p> <p>Latest available source: <i>Indicative Report of Teacher Salary</i>, June 2020.</p> <p>Possible to disaggregate data at the provisional level and by zone (urban-rural) for later stages.</p>
<p>Special Education</p>	<p>Ratio students per teacher -Private education sector -Public education sector Using indicators: 1. Students by level of study/cycle according to political/territorial division: - Initial level by cycle and disability, - Primary level by disability, - Mainstream education and young adults by disability, - Integrated into mainstream education by disability. 2. Establishments and service units by educational service (initial, primary, integrated, special secondary, integrated into mainstream) according to political/territorial division. 3. Teaching positions by attachment to functional organic space, educational function and management sector (management, student-facing teacher, support, 1:1 staff) according to political/territorial division.</p> <p>Working conditions Indicators: 1. Teaching hours by attachment to functional organic space and management sector according to political/territorial division. 2. Gross salary and net salary of grade teacher with 10 years of experience (salary of reference).</p>	<p>Primary data source: <i>Educational Statistics Yearbook</i>. Directorate of Educational Evaluation and Information, Ministry of Education of the Nation (DINIECE).</p> <p>Secondary data source: <i>Indicative Report of Teacher Salary</i>. Ministry of Education. General Coordination of the Study of Costs of the Education System (CGESCSE).</p>	<p>Information is required on the target ratio of students to teacher in this type of schooling.</p> <p>Information provided on the ratio is taken from specific studies on special education and collective labour agreements from this particular education sector.</p> <p>Given that the information on incidence and prevalence of persons with a disability is estimated on the basis of the 2010 Census, the estimation of the deficit and employment demand is an approximation.</p>

Service	Indicators	Type and source data	Observations	
<p>Care of people who are ill and patients</p>	<p>Ratio of medical professionals to patients -Physicians for every 10,000 inhabitants. -Nurses for every 10,000 inhabitants (disaggregated by technical staff, auxiliaries and licensed nurses). -Obstetricians for every 10,000 inhabitants. -Health workers in other specialties (not physicians, midwives, nurses)</p> <p>Residence positions for these specialties across the whole country: -According to financing source, -According to area of health, -According to gender.</p> <p>Percentage of public expenditure on health used to pay staff salaries.</p>	<p>Secondary data source: Inventory of statistical operations and administrative sources.</p> <p>Basic Health Indicators. Directorate of Health Statistics and Information, Ministry of Health of the Nation (DEIS), Ministry of Health of the Nation.</p> <p>Document: <i>Workforce in the health sector in Argentina, from the Federal Observatory for Human Resources for Health</i> (Published in August 2020 with information from 2019).</p>	<p>The information is presented in aggregated form and in percentages, which makes a detailed analysis difficult.</p> <p>The information available is from 2019.</p> <p>On infrastructure and physical resources for health, there is no information published by the DEIS.</p>	
	<p>Non-professional health care.</p>	<p>From ILO-GED, provided by the ILO Argentina team.</p>	<p>The document written by Ilkcaracan and Kim (2019) estimates the non-health care support staff on the basis of information provided by ILO-GED.</p>	
<p>Long-term Care</p>	<p>Older Adults</p>	<p>-Older adults according to levels of dependence (light, moderate, severe) by sex. -Gerontologist per 1,000 inhabitants. -Ratio of personal carers to number of older adults with moderate or severe dependence. -Number of households and residences for older adults by type of management. -Average workers in households and residences for older adults.</p> <p>Working conditions -Weekly number of hours worked. -Average salary. -Level of registration.</p>	<p>Primary source: DINAPAM, Ministry of Social Development of the Nation: Register of Domestic Carers.</p> <p>Secondary source: <i>Report on the National Survey of the Quality of Life of Older Adults (ENCaViAM) 2012</i>. Barometer of Social Debt with older persons from the UCA.</p> <p>Reports and registers provided by PAMI.</p>	<p>The estimation is approximate because of the weakness of the sources of information.</p> <p>The salary of households for adults by DINAPAM only provides a list of establishments for the Province of Buenos Aires and the Autonomous City of Buenos Aires. The latest survey on quality of life of older adults is from 2012, concerning urban conglomerates.</p> <p>It is not possible to include an estimation of paid care in the household provided by unregistered carers.</p> <p>It is also impossible to separate specific care of older persons on the basis of the module on unpaid work.</p>
	<p>Persons with a disability</p>	<p>-Population with a disability, by type of disability, age and sex. -Population with a disability, by type of disability, age and sex with a disability registration document (CUD). -Health coverage of the population with difficulties of six years of age and over, by region. -Care services for persons with a disability with severe dependence by type of service and province (day centres, homes, residences, small homes) and type of management. -Carers in the home.</p> <p>Working conditions -Weekly number of hours worker. -Average salary. -Level of registration.</p>	<p>Primary source: National Register of Service Providers of care and rehabilitation persons with a disability. National Agency for Disability (ANDIS).</p> <p>National Register of persons with a disability registration document (CUD).</p> <p>Secondary source: <i>National study on the profile of persons with a disability</i>, INDEC, 2018.</p>	<p>The information from ANDIS can only be accessed with permission. The information on care at home is the same as for older adults.</p>

Service		Indicators	Type and source of data	Observations
Care services at home	Paid	<p>Coverage Number of households with older persons above the age of 65 years or persons with a disability with some degree of dependence who hire workers for work in individual homes.</p> <p>Working conditions -Average salary of workers in individual homes. -Cost of social security registration -Percentage of care workers registered.</p>	<p>-ENES (2015). PISAC MINCYT.</p> <p>-Survey on Employment Conditions, Labour and Health, and Security (ECETSS 2018).</p> <p>Quantitative secondary sources taken from literature in that field</p>	Available information to support building the indicators.
	Unpaid	<p>Coverage Number of households with older persons above the age of 65 years or persons with a disability with some degree of dependence who hire workers for work in individual homes.</p>	<p>- (ENES) (2015). PISAC MINCYT.</p>	Available information to support building the indicators.

▶ Annex II. Considerations regarding data

Considerations regarding data about the education sector

▶ Non-formal Early Childhood Attention and Education (ECAE)

The information collected by the Information and Monitoring System of Child Development Centres (CDC) does not include CDCs or Early Childhood Centres (ECC) of the Autonomous City of Buenos Aires. In addition, the information is presented in percentages, which makes it difficult to incorporate this jurisdiction in the same way as the rest.

Furthermore, information is not provided relating to:

- ▶ staff salaries in these spaces,
- ▶ number of children by age and class for all spaces across the country,
- ▶ teaching positions, and student-facing facilitators and support staff,
- ▶ type of school day attended by children,
- ▶ potential and unmet demand.

Systematized information does not include municipal, provincial or community child development spaces that are not part of the CDC programme, thus it is possible that the supply is underestimated on the basis of the existing information.

Non-formal spaces managed privately or in workplaces and/or trade union spaces are also not included, given that their institutional characteristics and the modalities of municipal regulation make it difficult to access systematized information about them.

This assumes a weakness in the sources of information that makes the diagnosis of the supply of and demand for ECAE services for early childhood in the country less reliable.

▶ Initial level

For the initial level, the following aspects require clarification:

▶ To calculate teachers' salaries at this level, the simple average is taken of the 24 jurisdictions for a representative position (class teacher with 10 years' experience). It was not possible to calculate the weighted average because the information was not provided on the number of teachers at this level in each jurisdiction.

▶ To calculate managers' salaries at this level, a reference salary is adopted of a manager at the primary level, as this information is not publicly available and there are minimal differences in salary between teachers at the initial and primary levels.

▶ Primary education level

For the primary education level, the following aspects require clarification:

▶ To calculate teachers' salaries at this level, the simple average is taken of the 24 jurisdictions for a representative position (class teacher with 10 years' experience). It was not possible to calculate the weighted average because the information was not provided on the number of teachers at this level in each jurisdiction.

▶ As 12 jurisdictions in the country divide the primary and secondary levels into blocks of seven and five years respectively; and the other 12 jurisdictions divide them into blocks of six and six years, it was decided to combine, in the results tables, the seventh year of compulsory mainstream education, for the calculation of some indicators.

▶ Secondary education level

For the secondary education level, the following aspects require clarification:

▶ To calculate teachers' salaries at this level, the simple average is taken of the 24 jurisdictions for a representative position (class teacher with 10 years' experience). It was not possible to calculate the weighted average because the information was not provided on the number of teachers at this level in each jurisdiction.

▶ The ration of staff to students is calculated considering: 1) support staff (tutors) to students; and 2) solely student-facing staff, following Rivas (2010).

▶ Special education

For special education, the following aspects require clarification:

- ▶ There is no information related to teaching salaries nor types of contract.
- ▶ The ratio of teaching staff to number of students is calculated by dividing the total number of students by the total number of teaching positions according to educational function of the position and management sector. However, the calculation did not include the enrolment of integrated students, as that data is incorporated into the calculations relating to mainstream education.
- ▶ The information on the level of registration in the sector is provided on the basis of the Survey on Employment Conditions, Labour and Health, and Security (ECETSS 2018), which provides information on the educational system by level, but not by modality. The information is presented in the form of percentages.

Considerations regarding data about the long-term care sector

The information relating to long-term care is divided into information specifically relating to older adults and to persons with a disability.

- ▶ With regard to older adults, 60 years of age was taken as the cut-off criterion —the age recommended by Ilkcaracan and Kim (2019) and Ilkcaracan (2020)—, but the work was carried out in age groups. The main source of information was the National Survey on the Quality of Life of Older Adults, 2012, complemented by data from the National Census of the population, households and dwellings (INDEC 2010).

-Information in that regard is divided into age brackets of “60 to 74 years” and “75 years and above” for most of the indicators, with the exception of the indicator “population of 60 years old and over by age group and sex”, where the brackets were set at every five years. The decision to work with age brackets is due to the fact that the prevalence of certain types of dependence increases in more advanced age brackets (75 and over), therefore if you consider people over 60 years to be potentially dependent then that could distort the real demand for care services in the older adults group.

-Concerning information about homes and residences for older adults, DINAPAM only provides a list of those

which are under the authority of the Ministry of Social Development of the Nation in the Province of Buenos Aires and the Autonomous City of Buenos Aires, without providing information about the other jurisdictions in the country. Due to the difficulty in accessing information on the services provided by homes and residences for older adults that are dependent upon provincial and municipal governments, it was decided to work with tertiary data sources, prepared by Alonso and Marzonetto (2019) using information gathered in 2016 by the INSSJP on the in-patient services of that institution by type of service by province. In addition, information was used from REFES, which also has difficulties because of the lack of registration of establishments. Between August 2020 and January 2021 (because of the specific circumstances caused by the COVID-19 pandemic in long-term residences for older people) an update was carried out that revealed approximately 3 000 establishments (an increase of ten per cent on the total number of establishments registered previously). Almost 50 per cent of new establishments registered are residents for older adults. Thus, we consider that the information referring to residences and homes under public management is underestimated in this systematization.

- ▶ Information relating to persons with a disability is based on the National Study of the Profile of Persons with a Disability, carried out by INDEC, the results of which are available from 2018 and are based on a special module of the 2010 National Census of the population, households and dwellings. The information relating to care services for this population has been built on the basis of the ANDIS portal used to consult service providers, updated in 2020.

The following sources of information were used:

- ▶ OFERHUS (2020) using the Federal Network of Registers of Health Professionals.
- ▶ ENCAVIAM (2012).
- ▶ INSSJP-PAMI (2016).
- ▶ Federal Register of Health Establishments of the Ministry of Health of the Nation (2021).
- ▶ National Study of the Profile of Persons with a Disability (2018) carried out by INDEC.
- ▶ WHO Global Health Observatory.
- ▶ Permanent Household Survey III 2017, INDEC- Ministry of the Economy.

- Public data from the budget, Ministry of the Economy.
- National Directorate of Human Capital and Occupational Health (2015) "Management of human resources for health in Argentina", using data from REFES.
- ILO, UN Women and UNFPA (2020) with data from the National Directorate of Maternity and Childhood (2017).

Collective Labour Agreement No. 122/75. 2017 through the Federation of Argentine Health Workers' Associations (FATSA). In this case, 40 per cent of social contributions are added.

This information enables the quantity of human resources to be established, as well as the profile of the population that receives the care. The information refers to professional and non-professional human resources of long-term health care (LTC) in care institutions and homes for persons with a disability and older adults, and the population that receives the care, by sex, age and other characteristics, such as primary caregiver and holder of a disability registration document (CUD).

► Care service indicators in homes

It is not possible to directly observe the salary of people who provide paid LTC at home, but an approximation was determined using the average income per hour of those working in individual homes calculated from the EPH, assuming that those who provide such care have a 40-hour working week.

As these workers come under the Special labour contract for staff working in individual households (RECTPCP), the net salary is equivalent to the basic salary of any other job covered by the Labour Contract Law.

The percentage of social contributions that a RECTPCP employer must cover is calculated using a sliding scale that takes into account the number of hours worked per week. In order to estimate the percentage of social contributions from workers' salaries, the amount of social contributions paid on the average income of a worker hired to work in an individual house was calculated for each category of number of hours worked and that was weighted on the basis of the number of workers in each category.

The amount of social contributions paid on a salary under the RECTPCP (nine per cent) is lower than that paid for long-term care (which is approximately 40 per cent).

When the person working in LTC carries out their role in a long-term residence, the employment relationship falls under the Labour Contract Law and not the RECTPCP. Therefore, to calculate their salary, the basic salary of a Geriatric Assistant is taken into account under

► Annex III. Conceptual and methodological contributions

► Table A1. Key concepts in the section on methodology

Supply	Reflects the actual provision of care, institutional and at home, either paid or unpaid, to meet the care needs of those belonging to the relevant category (Children and adolescents, older adults, persons with a disability).	
Demand	Current	Reflects the current demand for services in each of the subsectors of people belonging to the relevant category (Children and adolescents, older adults, persons with a disability).
	Potential	Evaluated according to the choice of different policy goals for each of the subsectors, in addition to taking account of demographic evolution.
	Universal	Would mean universal coverage for the whole target population (according to demographic evolution) that could need a particular type of care.
Deficit	Determined by comparing the current supply and the current, potential or universal demand. Reflected in the number of people from the relevant category (Children and adolescents, older adults, persons with a disability) that do not have access to institutional care or professional care at home, disaggregated by public and private services as well as by paid and unpaid work.	
Coverage	Number of beneficiaries (in relation to the potential target population) that receive services provided by each care subsector.	
Quality of coverage	Ratio	Proportion of the number of beneficiaries for each worker/service provider.
	Infrastructure	Referring to the specific establishments where the various services are provided.
Employment conditions	Also has an impact on quality of services. Evaluated principally in terms of the salary of employment positions.	

Source: prepared by the authors using ILO-UN Women (2021).

► Annex IV. Estimating school infrastructure

The source selected in order to evaluate construction costs is the 2019 Half-yearly Monitoring Report PROMEDU IV,¹ according to which a square metre in a pre-school or kindergarten costs **36 860.08 Argentine pesos**; and the value of a square metre when building a primary or secondary school is **29 829.55 Argentine pesos**. Expanding the infrastructure would, in all cases, require the construction of new schools², for which the parameters for the number of square metres per student are **4 m²** at the initial level and **5 m²** at the primary and secondary levels. The parameters used to assess the infrastructure associated with an expansion in special education are the same as those applied to primary and secondary education, as the expansion of coverage is focused on persons with a disability older than six years of age.

While no infrastructure deficits were identified in this aggregated analysis at the country level with regard to meeting minimum standards, a detailed analysis disaggregated by province carried out by the team at the IIEP highlighted such deficits in some jurisdictions. Fiscal efforts would be required in these territories in particular in order to address these deficits before the rest of the infrastructure could be expanded. This cost should be added to the results presented in this report.

This analysis of averages at the country level did not identify any infrastructure deficits to be addressed with regard to minimum standards. However, Argentina is a country with significant inequalities between its territories and specific studies are needed in each jurisdiction in order to identify local structural deficits. These costs should also be added to the results presented in this report.

The following sections outline the sources consulted to determine the space needed for each student at the different levels and the respective price of a square metre of infrastructure.

Estimating the size of space needed

In Argentina, three national censuses of school infrastructure (CeNIE) have been carried out, the first in 1994³, the second in 1998⁴ and the latest between 2008 and 2009⁵. Unfortunately, it was not possible to access the census data with the required degree of detail and thus tertiary sources were used to determine the coverage of school infrastructure in the country. Acuña establishes, using the CeNIE database from 1998, that educational teaching establishments at the initial level have **4 m²** per student, and the other levels have **5 m²** (2015:47); these measurements coincide with the minimum surface area per student required in the regulations issued by the Directorate of Infrastructure of the Ministry of Education (1998)⁶ (2015:14).

The fiscal efforts allocated to these specific territories to address the aforementioned deficits should be added to the results presented in this report, which limited its work to determining the cost of the infrastructure required to house new beneficiaries who intend to use care services to 2030.

Estimating the value of the space needed

The best available source of data on the cost of building pre-schools and secondary schools was the 2019 Half-yearly Monitoring Report PROMEDU IV. According to the Programme's Internal Rules of Operation⁷, PROMEDU IV seeks to support national educational policy, in order to:

- increase coverage of schooling at the initial and secondary levels,
- improve learning at the primary education level,
- improve internal efficiency (retention and promotion) at the secondary level,
- improve processes for the management and use of educational information for monitoring.

► **Table A2. Valuation of m2 using PROMEDU IV: Programme to support the policy to improve educational equality**

Subprogramme II: Expanding school infrastructure

Description	Implemented
Building and Equipping at the initial level. External financing: associated loan IDB: 3455/OC-AR	
Number of schools	90
Number of available places	17 700
Number of students per school: places/schools	197
Number of m ² per student per school	4
Equivalent size: m ² built	70 800
Number of m ² per student per classroom	1.6
Maximum number of students per room	25
Equivalent number: classrooms built – places/maximum number of students	708
Number of m ² dedicated to classrooms	28 320
Total value: allocated budget (in thousands of US dollars)	USD 91 301.00
Value per school: total value/schools (in US dollars)	USD 1 014 456
Value per classroom: student per classroom/m ² per student per room/value of m ²	USD 51 582
Value per student: total value/students (in US dollars)	USD 5 158
Value per m ² (in US dollars): total value/m ² built	USD 1 290
Building at secondary level: local financing	
Number of schools	19
Number of available places	6 840
Number of students per school: places/schools	360
Number of m ² per student per school	5
Equivalent size: m ² built	34 200
Number of m ² per student per classroom	1.5
Maximum number of students per room	25
Equivalent number: classrooms built – places/maximum number of students	274
Number of m ² dedicated to classrooms	10 260
Total value: allocated budget (in thousands of US dollars)	USD 35 691.00
Value per school: total value/schools (in US dollars)	USD 1 878 474
Value per classroom: student per classroom/m ² per student per room/value of m ²	USD 39 135
Value per student: total value/students (in US dollars)	USD 5 218
Value per m ² (in US dollars): total value/m ² built	USD 1 044

Source: Second half-yearly report 2019 PROMEDU IV. Available in Spanish at: https://www.argentina.gob.ar/sites/default/files/promedu_3455_-_informe_2deg_semestre_2019.pdf

The Programme is organized across two sub-programmes: Subprogramme I on Improving Performance of the Educational System and Subprogramme II on Expanding School

Infrastructure. The latter, of interest for our research, includes building and equipping educational infrastructure, with the specific goal of increasing access to initial and secondary level education, and includes.

► **Table A3. Value of m² using PROMEDU IV**
 Second half-yearly report 2019 PROMEDU IV (values given in US dollars)

Official average exchange rate December 2019	62.74
Value of m ² in pesos, initial education, December 2019	80 901.06
Value of m ² in pesos, basic education, December 2019	65 470.33
Deflator of the cost of construction index – Greater Buenos Aires, December 2019 (baseline Dec. 2017)	2.19
Value of m ² , initial education, December 2017	36 860.08
Value of m ² , basic education, December 2017	29 829.55

Source: Data from the Ministry of Education on the PROMEDU IV Programme and official exchange rate of the Bank of the Argentine Nation (BNA).

- building and equipping initial education establishments,
- building and equipping secondary education establishments.

According to the information available, thanks to international financing, in the second half of 2019, 90 kindergartens were built, which enabled the number of places to be increased by 17 700 costing US\$91.3 million of the US\$156.5 million allocated. Thanks to local financing, 19 secondary schools were built which generated 840 school places, at a cost of US\$35.6 million.

Although the Project progress report for PROMEDU IV does not report the number of square metres built, it is the source that offers the best information on the price of square metres, allowing a distinction to be made between the cost of initial education and that of basic education (primary and secondary). This

limitation in the source can be mitigated by taking as a parameter the average number of square metres per school and per classroom, noted in the previous section, which make it possible to estimate the value of one square metre. Details can be found in **Table A2**, prepared using information from completed works.

The official average exchange rate from December 2019 is used to convert the value of a square metre into pesos, deflated using the general cost of construction index (ICC) for Greater Buenos Aires. ► **Table A3.**

- 1 PROMEDU IV – Half-yearly monitoring report. https://www.argentina.gob.ar/sites/default/files/promedu_3455_-_informe_2deg_semestre_2019.pdf
- 2 Although it is not presented in this exercise, with the information available it is possible to estimate the cost of construction of classrooms and individual rooms.
- 3 The average size of school buildings in the state system is 753.7m² and the average number of students in the educational establishments is 220.6. In the private sector, there is an average size of 1,337m² and an average of 271.4 students. Educational establishments and school buildings are not equivalent units, which is why it was not possible to establish a fixed number of m²/student. <http://www.bnm.me.gov.ar/giga1/documentos/EL001406.pdf>
- 4 Provides the number of school buildings, but not the number of square metres. <http://www.bnm.me.gov.ar/giga1/documentos/EL002894.pdf>
- 5 Provides the number of square metres, but does not make it possible to determine which level of education each belongs to. <https://www.argentina.gob.ar/educacion/evaluacion-informacion-educativa/censo-nacional-de-infraestructura-escolar>
- 6 Criteria and basic standards for school architecture. <https://www.educ.ar/recursos/114117/criterios-y-normativa-basica-de-arquitec-tura-escolar/download/inline>
- 7 Available at: https://www.argentina.gob.ar/sites/default/files/reglamento_operativo_promedu_iv.pdf

► Annex V. Estimating long-term residence infrastructure

Roqué *et al.* (2014) surveys 1 803 long-term residences and estimates the average number of occupied places, available places and rooms in residences (pp. 161-163). ► **Table A4.**

While Gascón and Redondo (2014) specify the maximum capacities in number of rooms in accommodation centres: “Rooms hold a maximum of three people, and there should be a minimum surface area of ten square metres for individual rooms, 14 square metres for double rooms, and 18 square metres for triple rooms, excluding the private bathroom if there is one” (p.54). Taking into account that the majority of rooms are doubles, (Roqué *et al.*, 2014) the standard size is used as a point of reference, which for double rooms is 14m², which is equivalent to 7m² per person.

Assuming that the averages reported by Roqué *et al.* (2014) are invariable over time, and using the information on the total number of long-term residences available in 2021, data can be obtained on the amount of space and number of beneficiaries, reported in **Table A5.**

Estimating the value of the space needed

Most of the public long-term residences are financed by municipal governments, thus, Bid No.20 File No. 4119-000584/2017 on the construction of the Rodríguez Ortega Municipal Older Persons’ Residence in the Municipality of Vicente López¹ was consulted. The contract was awarded for 129 890 652.00 Argentine pesos, as at 2017. Paragraph 7.2 of the list of special legal clauses establishes that the establishment is of average complexity, with a volume of work of 4 000 m²,

which yields a value per square metre equivalent to 32 472.66 Argentine pesos, which using the official (BNA) average exchange rate in December 2017 (17.94 Argentine pesos) gives a value for each square metre of US\$1 810.07.

¹ Available at: <https://www.mininterior.gob.ar/licitaciones/licitacion.php?i=4038>

► **Table A4. Number of available places, occupied places, and rooms, by type of establishment**

Description	Type of long-term residence (LTR)			
	Private	Public	Civil Society	Total
Average number of available places	30	24	30	29
Average number of occupied places	27	22	31	27
Average number of rooms	12	9	18	12

Source: REFES (2021) and Roqué *et al.* (2014).

► **Table A5. Number of residents by type of establishment**

Descripción	Tipo de RLE			
	Privadas	Públicas	Sociedad Civil	Total
Average number of rooms per LTR	12	9	18	12
average number of available places per LTR	30	24	30	29
Average number of occupied places per LTR	27	22	31	27
Number of LTR	2 552	309	29	2 890
Total number of rooms	30 624	2 781	522	34 680
Total number of available places	76 560	7 416	870	83 810
Total number of occupied places	68 904	6 798	899	76 601
Difference between available and occupied places	7 656	618	-29	7 209
Vacancy (%): dif avail.-occup./total available places	10 %	8 %	-3 %	9 %
Number of m ² per room (based on double room)	14	14	14	14
Number of m ² per person per room	7	7	7	7
Number of m ² available	535 920	51 912	6 090	586 670
Number of m ² occupied	482 328	47 586	6 293	536 207
Difference between m2 available and occupied	53 592	4 326	-203	50 463

Source: REFES (2021) and Roqué *et al.* (2014) and Gascón and Redondo (2014).

► **Table A6. Value of m²**

Average exchange rate December 2017	\$ 17,94	Value of m ² Pub. bid (\$)	\$ 32 472,66	Value of m ² Pub. bid (USD)	\$1 809,59
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Source: prepared by the authors using Public Bid No.20 File No. 4119-000584/2017

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