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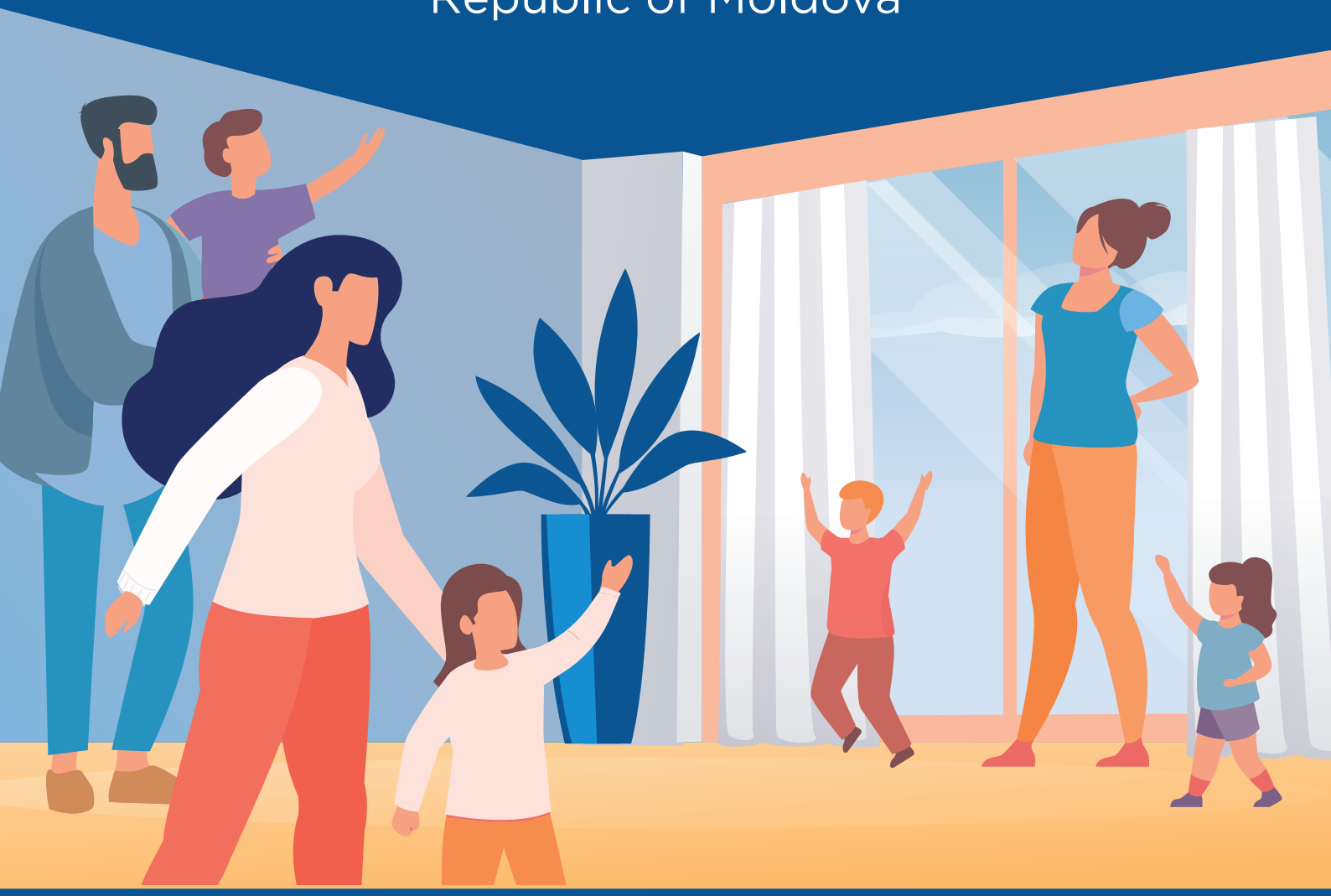
GUVERNUL REPUBLICII MOLDOVA

Study on assessing the fiscal and employment benefits on gender equality through institutionalized **CHILDCARE SERVICES** in the Republic of Moldova



CIVITTA

ECONOMIX Research & Consulting

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clarity from complexity

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EXECUTIVE SUMMARY

Too many women still have to choose between a profession and a family when the time comes to consider starting a family. With limited childcare options, limited parental leave and lack of flexible work options, managing both demands can be difficult. As a result, many women either have fewer children than they intended or are unable to reach their full professional potential. Both outcomes have detrimental effects on society as a whole as well as on the individual women who are left with less options and possibilities. Women's talents and other contributions to economic and public life go unfulfilled when they are compelled to leave their occupations in order to care for their families and household. And when women are unable to have the number of children they desire because doing so would considerably impact their careers, the resulting low birth rates put additional stress on already declining population numbers.

According to a Time Use Survey conducted by Moldova's National Bureau of Statistics from June 2011 to May 2012, most unpaid work in the country is performed by women: about 66 per cent of women's total working time constitutes unpaid work (4.9 hours per day). Men, on the other hand, allocate less than half of that time toward unpaid work (2.8 hours per day or 46 per cent of total working time).

Several studies to identify gaps in Moldova's childcare system at the regional level, analysing its effects on women's employment and desired fertility versus actual fertility rates. The studies found that greater availability of affordable, high-quality childcare services for children of pre-school age (0 to 6 years), especially infants and toddlers (0 to 3 years), can improve female participation in the labour force. It can also reduce the number of working mothers in lower-paid jobs. With limited childcare opportunities, women tend to seek out jobs that offer more flexibility and shorter working hours, however these types of jobs tend to be lower-paying ones. Thus, improved childcare availability would allow them the opportunity to pursue jobs with higher earning potential.

Several studies, including in the Republic of Moldova, demonstrate the contribution of early and pre-school education in raising the learning opportunities of children from poor families, improving their preparedness for school, and, in the longer term, increasing social mobility and poverty reduction. That is an important consideration for single-parent families, families with many children, Roma families, inter alia. The availability and accessibility of early education services contributes to growth in the birth-rate, and to the share of women in the labour market.

The findings of a joint UNICEF/UN Women study on demand and supply of services for children under six prove that there is a high demand of services for children under three in the country but in spite of this high demand, only 15% of needs are covered. Hence, availability of child care and education institutions can make significant impact on the ability of women to obtain and retain employment.

During 2013-2015, UNICEF modelled 10 creche-groups based on demand set up in existing kindergartens which were fully equipped with furniture, toys, books for professionals, caregivers and children. Additionally, two guides for educators on working with children under three and their parents were developed and 40 professionals (including educators, managers and rayon inspectors) enhanced their knowledge on child-centred methodologies, benefited from local mentoring and apply child-friendly approaches in their daily work. Around 250 children under three, including children with special education needs exercise their right to early education and care and around 200 parents, including fathers, apply positive parenting practices to stimulate the social-affective, cognitive, and motor development of their children and are aware on issues related to health care and nutrition.

The applied community driven development approach facilitated the direct involvement and ownership of the beneficiaries and was essential to ensure the sustainability of newly created services. Availability of such services, in addition to ensuring a child's full development, can significantly improve the ability of women to get and stay employed.

The modelling of services for children under three were internationally evaluated in 2016 and proved to be highly cost-efficient intervention. All 10 creche-groups were operational and proved to be highly relevant for the needs of children, parents and professionals as well as fully in line with the national priorities and international human rights commitments.

Furthermore, the COVID-19 pandemic increased the socio-economic vulnerabilities of Moldovan women. A recent UN Women study on barriers for women in the labour market, which was conducted by the Centre Partnership for Development (CPD), identified that reducing the motherhood penalty in labour market participation and improving the quality of employment and women's earnings will require increasing access to childcare services and improving their quality.In 2021, UNFPA conducted a comparative analysis on "Gender responsive family friendly policies: national regulations in the light of new European standards", which served as a basis for several legal amendments of the Labor code, paternity leave and childcare leave.

Several important steps have been taken by the Parliament by amendment of the Education Code in 2019. The new provision for organisation of general education and access to early education of preschools has changed the enrolment age from 3 – 6 (7) to 2-6 (7) years old and for creches from 0-3 to 0-2 years old.

In addition, in November 2021, the Parliament amended the Labour and Education Codes, allowing employers to provide childcare services for children aged 0 to 3, in addition to state-provided childcare. Moreover, in 2022, UNICEF, UNFPA and UN Women jointly helped draft Moldova's new law on alternative childcare solutions, which was approved by the government in December 2022.

The government has also approved several legislative amendments to advance family-friendly policies, ensure the equitable involvement of parents in raising and caring for children, facilitate women's access to the labour market and support couples and families in achieving their desired fertility intentions. To regulate alternative childcare services in the public and private sectors, the government developed the National Programme for Childcare Services for children under 3 years of age.

Considering these developments, UN Women, UNICEF and UNFPA partnered to conduct a fiscal assessment of the employment benefits of institutionalised childcare education in Moldova. This study analyses the implementation of the new legislative proposal for early childhood education and care for the period 2023-2026, including its fiscal and employment effects on gender equality. The study deploys methodology used by UN Women and the International Labour Organization (2021), which is based on an analysis supported by UNFPA on the National Crèche Fund in 2022 and information gathered during interviews with various stakeholders.

The study delivers an initial estimate of the implementation cost of the programme and the direct employment it created, as well as the indirect effects derived from the initial expenditure, such as growth in demand and employment. Higher female participation in the labour force leads to higher gross domestic product (GDP), and the initiative is expected to increase female employment rates overall. This, in turn, will increase fiscal revenues through higher employment.

Approximately EUR 93 million would be needed to achieve the programme's goals in terms of expanding childcare coverage and attaining quality standards. This estimation is based on the latest statistical data on childcare coverage, employment in education and information from stakeholders. The direct employment created by the investment is expected to be around 2,962 jobs in the education sector.

Considering the previous expenditure estimations, the Input-Output analysis estimates an additional increase in employment through indirect effects, including 7,384 jobs in 2023 and 950 annually between 2024-26. In terms of both output and employment, the construction sector will benefit in the short-term; however, consumer-oriented and manufacturing sectors will experience additional growth over the medium-term as well.

In 2026, it is expected that women will hold 58 per cent of the additional jobs stated above. These measures might lead to a 12.6 per cent reduction in the gender gap in participation rates by 2037. This, in turn, could increase GDP per capita by 2.6 per cent by 2037 compared to the baseline.

Taking into account the expenditure and the expected revenues from indirect effects via taxes, the final cost of the fiscal revenue is estimated to be MDL 828 million (EUR 41 million).

Finally, based on the results and stakeholders' consultation, different policy recommendations emerge both in qualitative and quantitative terms. Among these include creating incentives for alternative childcare solutions, increasing transparency in terms of childcare options and setting a staff-to-child of eight children to one caregiver and educator at the maximum. Other recommendations include monitoring the outcomes and increasing affordability and women's employment opportunities in this sector.

1. INTRODUCTION

1.1 Background

The primary purpose of the study is to provide data and evidence on the costs and benefits of institutionalizing childcare services within Republic of Moldova to support the development and implementation of the National Programme on childcare for children under 3 years old and policy and legal amendments on family friendly arrangements in public and private sectors.

The analysis includes data collection to estimate the cost of childcare as well as simulations of the impact of childcare coverage on employment and fiscal revenues. The outcome of this analysis is a flexible tool that allows for further use based on the updated data on childcare services and labour force participation, to easily assess economic costs of interventions and fiscal revenues from women's labour force participation. The design of this tool included relevant national and administrative data such as input-output tables, national statistics, government budget and fiscal spending patterns for the early childhood care and education as well as information any additional information from interviews with relevant stakeholders. Table 1.1 outlines the steps undertaken in this study.

Table 1.1: Overview of the analysis

Task	Description
Task 1: Methodology refinement and validation; data scoping	Preliminary data scoping and refinement of proposed methodology. As required by the TOR, the international expert will validate the proposed methodology
Task 2: Data collection, country-level calculation and stakeholder interviews	Data collection and conducting stakeholder interviews to collect additional information. Using the methodology from Task 1, perform the country–level calculations.
Task 3: Stakeholder validation	The group of stakeholders will be asked to review and validate the results from Task 2.
Task 4: Reporting	Report writing

The current report provides an overview of the initial results of the analysis.

1.2 Report structure

The report is structured as follows.

Chapter 2 of this report outlines the proposed methodology for constructing a tool for the Republic of Moldova that can be used to estimate the impact of childcare coverage on employment, and in particular female employment, as well as fiscal revenues.

Chapter 0 summarises the cost implication of expanding early childcare provision by 2026 and the assumptions made to reach these estimates.

Chapter 4 discuss the indirect economic and labour market implications of the additional expenditure requirement from Chapter 0.

Chapter 5 summarises the impact of increased childcare provision on the female labour market participation and female employment.

Chapter 6 outlines the budgetary implications.

Chapter 7 discuses some of the policy implication and recommendations based both on the tool development as well as stakeholder interviews.

2. METHODOLOGY

2

2.1 Introduction

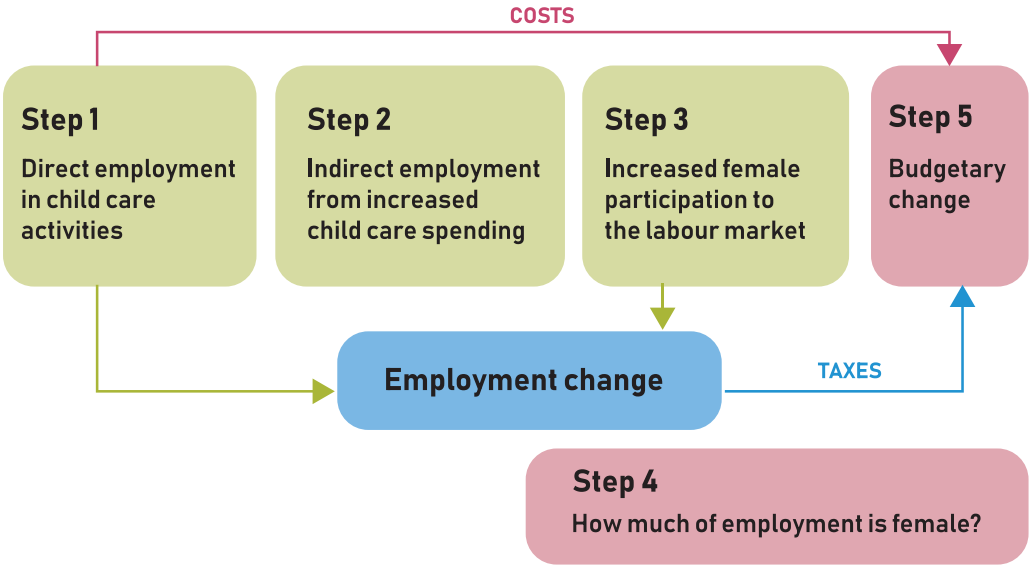
This chapter outlines the proposed methodology, which was validated by the international expert, Nicola Duell.

The methodology is broken down into five steps:

1. Estimate total expenditure cost of childcare based on increased coverage and direct employment
2. Estimate the indirect increase in employment as a result of increased childcare expenditure
3. Estimate increased employment and GDP as a result of increased female participation in the labour market
4. Estimate share of female employment in total employment increase
5. Estimate the increase in fiscal revenues as a result of increased employment from Step 1 to 3; estimate net change in fiscal contributions

Figure 2.1 summarises the interaction between the five methodological steps. Steps 1 and 2 are set to give us the changes in employment from the increased childcare provision via direct employment (additional staff needed to operate the facilities) and indirect (the employment impacts resulting from the additional economic activity generated by the expenditure). Step 3 estimates the employment impacts of increased labour market participation, while Step 4 aims to calculate the proportion of female employment given the total employment change generated by Steps 1 to 3. Step 5 calculates the budgetary changes by taking into account the additional costs of increased childcare as well as the changes in tax revenues from the changes in employment.

Figure 2.1: Outline of methodology steps



The approach in calculating each of the steps is further detailed in the sections below.

Source(s): Cambridge Econometrics.

2.2. STEP 1: Estimate total expenditure cost of childcare and direct employment

The methodological approach proposed by the project team to assess the cost of childcare and its employment and fiscal implication is in accordance with UN Women's Guide to Public Investment in the Care of Others' Economy[1]. To this end, the research team has gathered a set of quantitative and qualitative indicators related to childcare, the labour market, demography and required infrastructure (e.g. new buildings, wages, pupil-teacher ratio etc.).

The methodological approach is flexible to either measure the expansion in the given institutional structure or to consider the cost of a mix of childcare models, e.g. smaller groups for ensuring higher quality, better trained staff, organisation of alternative childcare provisions in rural areas, promoting childcare facilities at employer's premises etc.

The next step in the methodology is to estimate the costs of expanding childcare in the country. By following the guidelines, the steps in Table 2.1 are covered.

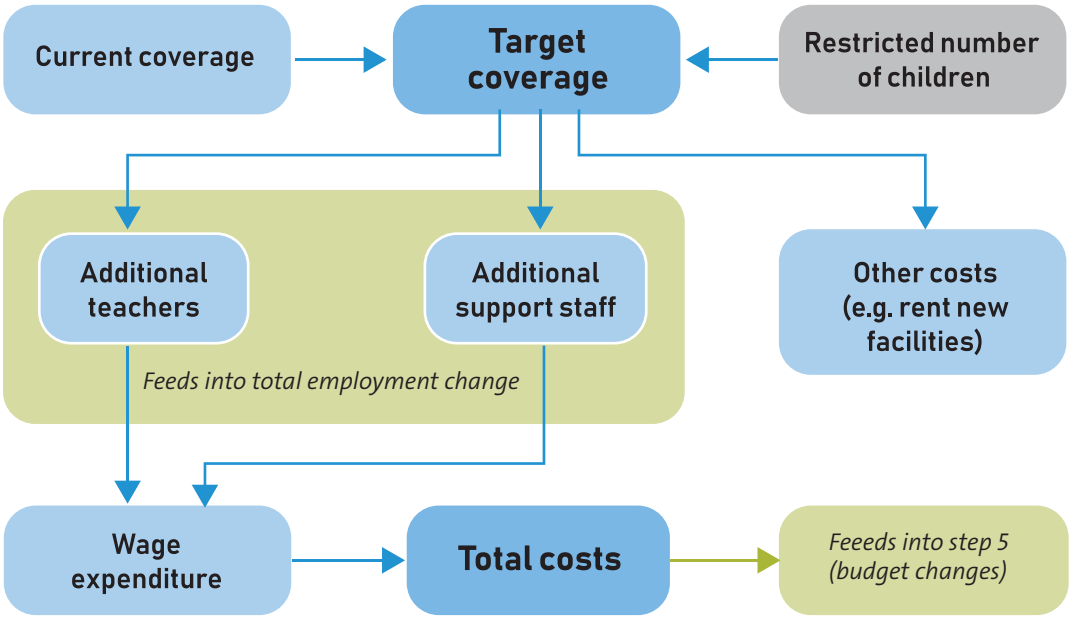
Table 2.1: Steps to estimate costs

Stage	Necessary data
Unit cost estimate	Salary and non-salary expenditures in the education sector Number of children enrolled in the childcare
Adjust unit cost based on quality-of-service criteria	Pupil-teacher ratio in childcare Existing quality objectives
Adjust unit cost according to job quality criteria, if applicable	Existing salary levels and targets
Estimate total cost	Unit cost per child adjusted for quality of services and employment multiplied by the additional number of children to be covered

The above method provides the cost per child for increasing childcare provision. The target coverage together with the information on child-to-teacher ratio and support staff-to-teacher ratio gives us information on additional staff requirements (see green circle in Figure 2.2). Information on average wages allows us to calculate the additional wage expenditure from the increase childcare coverage, and this together with the information on classroom size and other costs would give us the total cost of increasing childcare coverage to the target coverage. This additional expenditure will be contextualized according to the fiscal capabilities in the central budget.

1 https://www.ilo.org/employment/Whatwedo/Publications/WCMS_781906/lang--fr/index.htm

Figure 2.2 Step 1 Estimating direct employment and costs from increased childcare coverage



The results from Step 1 are summarised in Chapter 2.7.

Source(s): Cambridge Econometrics.

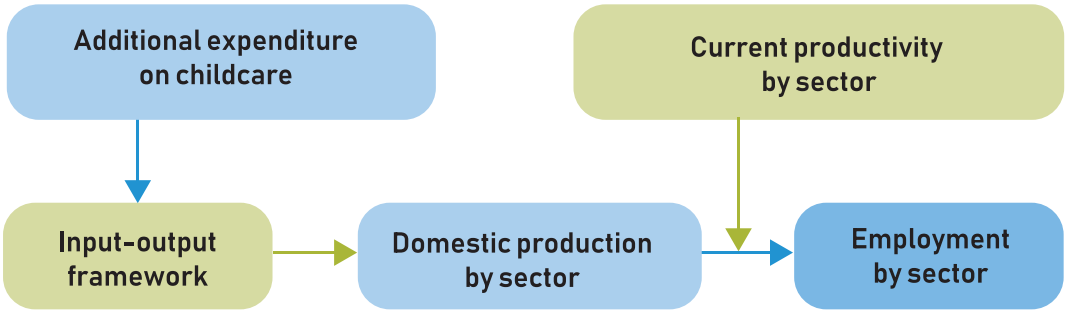
2.3. STEP 2: Estimate the indirect increase in employment as a result of increased childcare expenditure

The size of the additional spending is also used to estimate indirect employment effects using Input-Output analysis. Indirect employment effects are those jobs created in sectors other than childcare (i.e. sector P Education) as a result of the demands that the increased childcare expenditures placed on other sectors (the inputs required for producing the increased childcare coverage and the outputs, in an Input–Output framework).

The results of the Input-Output analysis are output, employment and income multipliers that will be used to estimate the economic impacts of increased childcare expenditure (see Figure 2.3). The multipliers capture the interdependencies between different industries and reflect the economic impacts of a change in final demand of a given sector on economic activity and employment across the economy as a whole.

To sum up, the Input-Output framework allows us to calculate the increase in domestic production resulting from additional expenditure on childcare and, using information on sectoral productivity, calculate the additional employment demand.

Figure 2.3 Input-output framework for calculating indirect employment impacts



The results from Step 2 are summarised in Chapter 3.5.

Source(s): Cambridge Econometrics.

2.4. Step 3: Estimate increased employment and GDP as a result of increased female participation in the labour market

Higher labour market participation for women leads to two main effects:

1. An increase in unemployment over the short term as people enter the workforce and look for work. The increase in unemployment reflects an (initial) excess supply of labour and, as a result, wages would be expected to adjust downwards (or grow more slowly). Some existing workers may also leave the labour market as a result of lower wage rates (i.e. below their reservation wage).
2. An increase in productive capacity eventually leading to increase in output (should the increase in demand support it), particularly in those sectors with constrained labour supply. Furthermore, lower wage rates could lead to improved competitiveness, lower prices and/or improved quality of goods and services.

To estimate these effects, we used information on labour supply to GDP coefficients from existing literature to estimate the potential increase in GDP from increased labour supply. For example, the European Institute for Gender Equality study in collaboration with Cambridge Econometrics resulted in estimates of per capita GDP changes from increases in labour market activity rates of women (see Figure 2.4). Such estimates can be applied to estimate the GDP and employment impacts of increased female participation in the Republic of Moldova as a result of increased childcare availability.

Figure 2.4 Effect of different gender equality pathways on GDP per capita

Source(s): EIGE, 2017. pp.35[2]

The results of Step 3 are summarised in Chapter 5.

2.5. Step 4: Estimate share of female employment in total employment

Steps 1 to 3 above estimate the total change in employment as a result of increased childcare provision. With Step 4, how much of the additional employment is held by women is estimated. We assumed that all additional employment generated by Step 1 (direct employment in childcare) and Step 2 has the same gender split as historical sectoral trends. Step 3 employment is assumed to be all female.

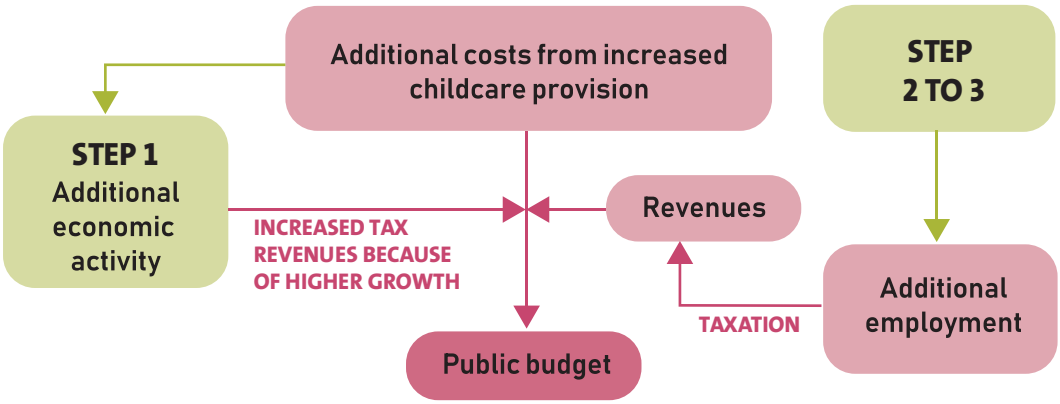
2.6. Step 5: Estimate increase in fiscal revenues as a result of increased employment from Step 1 to 3; estimate net change in fiscal contributions

The total costs associated with increased childcare provision is estimated in Step 1. This step estimates potential increases in tax revenues resulting from increased employment and economic activity as highlighted under Steps 1 to 3, leading to an estimate of net fiscal effects (see Figure 2.5). To estimate the change in revenues, the methodology makes use of current tax rates in the economy that can be applied to wages and additional value-added generated in the economy.

2 Economic Benefits of Gender Equality in the European Union: Report on the empirical application of the model | European Institute for Gender Equality (europa.eu)

The calculation of cost of increased childcare coverage is a result of Step1 and takes into account wages and salaries bill for the additional staff as well as any other additional expenditure (e.g. rent and supplies). The changes to revenues calculation is two-fold: 1) accounting for additional tax revenues resulting from wages of those employed; and 2) the increase in tax revenues from the changes in economic activity.

Figure 2.5 Calculating the impact on the public budget



Source(s): Cambridge Econometrics.

The results of Step 3 are summarised in Chapter 6.

2.7. Caveats and barriers

The analysis is not without limitations.

Step 1 is based on UN population projections taking into account the current fertility rates. Many of the employed women are childless and an increase in fertility rates would increase proportionally the expenditure needed.

Step 2 methodology is based on Input-Output table from 2014, which might lead to an under-/overestimation of the indirect effects. Moreover, induced effects in the multiplier analysis are not captured.

In Step 4, the historical allocation of jobs between genders (i.e. within a sector the same employment share persist between men and women) is used to project the future employment of women. This kind of initiative might change the structure of the sectoral employment in favour of women.

There are many barriers to employment which the quantitative analysis did not capture. One of the being the availability of jobs in rural areas.

3. ESTIMATE OF TOTAL EXPENDITURE COST OF CHILDCARE AND DIRECT EMPLOYMENT

3

3.1 Introduction

In this chapter, the expenditure needed calculation is described. In Section 3.2, the draft policy implementation is explained.

In Section 3.3, the assumptions behind the expenditure estimation for the implementation of the early childhood education programme are explained. Firstly, the different assumptions on which the results rely are detailed (e.g., population changes, children per group, children enrolled). Secondly, the economic (fiscal) cost estimation is analysed at the different levels of categories offered by the tool: pedagogical staff, maintenance and infrastructure. This estimation offers results for the cost of extending early education across Chișinău and the rest of the country in the Republic of Moldova. In particular, the age range covered by this calculation is the children between 0 and 3 years old (i.e., 0, 1, and 2 years old).

3.2. Background to policy to increase childcare. Multiple factors explain the policymakers' need to increase childcare

Investment in childcare programmes can have a positive impact not only in terms of children's outcomes but also in their parents, both in the professional (labour outcomes) and social (personal outcomes) aspects. Also, childcare programmes have a positive impact on addressing demographic challenges by supporting families and women to achieve their desired number of children. Such investments can have a positive impact on the former improving their socio-emotional development, and even motor and language skills in specific cases (Felfe and Lalive (2018)[3]). On the parental side, the effects can be found both in the social and economic aspects, such as mothers' stress, and labour market outcomes respectively (Yamaguchi et al (2018)[4] and Morrissey (2017)[5]).

Childcare programmes contribute to social mobility. Social mobility is key in guaranteeing diversity and equal opportunities regardless of the socio-economic background behind a particular person (OECD[6]). It can also contribute to educational outcomes, boosting the productivity in the future. In these terms, public investment in childhood education and childcare can explain observed differences in intergenerational social mobility across different countries (OECD,2010)[7].

3 Felfe, C., & Lalive, R. (2018). Does early child care affect children's development?. Journal of Public Economics, 159, 33-53.

4 Yamaguchi, S., Asai, Y., & Kambayashi, R. (2018). How does early childcare enrollment affect children, parents, and their interactions?. Labour Economics, 55, 56-71.

5 Morrissey, T. W. (2017). Child care and parent labor force participation: a review of the research literature. Review of Economics of the Household, 15(1), 1-24.

6 Understanding social mobility | OECD

7 Causa, O., & Johansson, Å. (2011). Intergenerational social mobility in OECD countries. OECD Journal: Economic Studies, 2010(1), 1-44.

Other studies also indicate that targeted early education programmes can improve social and labour outcomes, as well as social mobility (Garcia et al., 2021[8]).

The global agenda followed by international institutions such as the UN and the EU, sets up different milestones for childcare to be reached by the participant countries. One clear example is the UN Sustainable Development Goals (SDG), in particular the target 4.2 stating "ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education". In addition, the EU membership candidate status for the Republic of Moldova in 2022 sets up common goals in terms of childcare such as providing care for 50% of children under 3 years of age by 2030.

Increases in GDP per capita and tax revenues could lead to poverty reduction. The expenditure on childhood education and childcare would lead to higher levels of employment in the future which would then create higher fiscal revenues and production. Assuming that UN SDG target no 4 is achieved, De Henau and Mojsoska-Blazevski (2019) estimate for FYR Macedonia an increase in initial GDP of 2.4% after the programme implementation with a net funding gap of 0.8% of initial GDP. Considering more ambitious scenarios, initial GDP could increase up to 5.8% with a net funding gap of 1.6% of initial GDP.

Childcare is also related to the gender gap, in all its different dimensions, employment, activity or wage. Given the impact of childcare on socio-economic female outcomes, for instance reducing the amount of time the mother spends on work or education, there also exists a link between the different gender gaps and childcare expenditure, as it is explained in the below section, under Current situation. Republic of Moldova is also trying to remove the gender gaps in labour markets, in line with SDG number 5, "Achieve gender equality and empower all women and girls" and the EU Gender Equality Strategy 2020-2025, setting the goal of "achieving equal participation across different sectors of the economy" or "closing the gender care gap". The gender gap can be associated with 17% loss of income per capita according to the World Bank report Teignier and Cuberes (2015)[9].

Demographic implications: Childcare programmes can contribute to better balance of the career and family responsibilities and support women to have the number of children they want. According to the Generations and Gender Survey conducted on the request of Moldova Government with UNFPA support, more than 50% of population in Moldova would like to have 3 or more children, but in reality, they have only 1 or maximum 2 due various constrains, including related to lack of early childcare facilities[10]. Considering the current demographic trends characterized by low fertility, ageing and out-migration of young and reproductive population, the development of childcare programmes are critical in supporting women and men to realize their fertility intentions and have the number of children they want.

8 García, J. L., Heckman, J. J., & Ronda, V. (2021). The lasting effects of early childhood education on promoting the skills and social mobility of disadvantaged african americans (No. w29057). National Bureau of Economic Research.

9 Cuberes, David; Teignier, Marc. 2015. How Costly are Labor Gender Gaps? : Estimates for the Balkans and Turkey. Policy Research Working Paper;No. 7319. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/22195 License: CC BY 3.0 IGO.

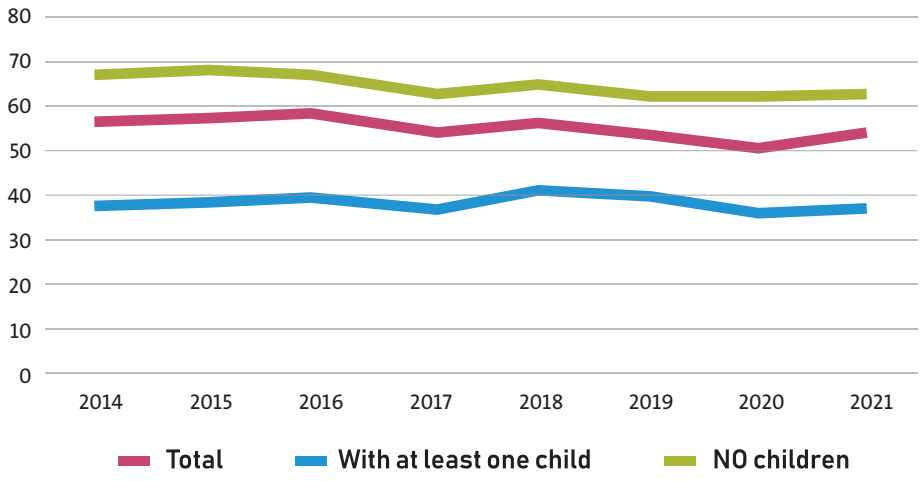
10 Gender and Generation Survey, Republic of Moldova, UNFPA https://moldova.unfpa.org/ro/publications/raportul-studiului-generaţia-gen-în-republica-moldova

Current situation

The labour market in Republic of Moldova is characterized by significant gender inequality. The gap between the activity or employment rates of women compared to men is currently set up around 10 pp. Other measurements such as the gender equality index constructed by the CPD (Centrul Parteneriat pentru Dezvoltare) indicate a poor equality performance across employers and unemployed persons signi-ficantly, scoring 51.3 and 65.6 points, being 100 perfect equality and 0 perfect inequality. The score for employed persons is at 81.7 points, far from the 95 points considered the level where gender equality is obtained.

The effects of childcare on women's labour market outcomes are noticed with the help of several indicators and surveys conducted. The employment rate of women with at least one child is currently stablished at around 39%, while being higher than 60% for women with no children, see Figure 3.1.

Figure 3.1: employment rate of women aged 25-49, %



Source(s): National Bureau of Statistics

In addition, the percentage of women being part of the NEET group (not in education, employment or training) is also higher for women than it is for men, possibly driven by childcare responsibilities.

Not enough children under 3 years old are enrolled in early childhood education. The current enrolment rates for children under 3 years old remain lower than those for older children, being currently around 15%, with a notable difference between the capital, Chișinău, and the rest of the country. However, the centres located in the former are currently experiencing sizeable pressures with rates of occupancy which surpass 100%. Such situation could negatively affect childhood outcomes in several aspects mentioned above.

Furthermore, following different interviews with stakeholders such as the Ministry of Education, problems within the legal framework also exist, as the current wage system for early childhood education may disincentivize university enrolment of the future teachers. This factor could also worsen quality of the childcare programme implying lower educational outcomes.

Plan of action

Childcare and early education remain a subject of concern for policymakers and different strategies are being implemented.

Following the UN and EU agenda, the Moldova 2030 National Development Strategy includes early childhood education, the improvement of the access of families and remove barriers to women in employment, facilitating their empowerment. Some concrete policies are mentioned, such as the monthly allowance for the person on childcare leave (approved in 2018), more flexibility in terms of childcare leave which can be shared and alternated between partners (2022), paternity leave for the employed fathers, flexible working arrangements in the Labour Code, and other allowances and flexibilities in terms of work contracts.

Despite policy efforts, some of the problems still persist

The National Program for Childcare Services for Children under 3 years intends to overcome existing issues through the following three types of measures:

1) Expansion of public creche services **to increase enrolment rates.** The goal of the Government is to reach an enrolment rate in public creche services of 30% or higher by 2026 for children aged 0 & 1 years old. For the children aged 2 years old the goal of early education institutions enrolment is set up at 60%.
2) Creation of three types of alternative childcare services to i**mprove work-life balance.**
    - Improve the accessibility to childcare through services organized by the employer at the workplace.
    - Individualized care services: “nanny” services. Formalise the situation of workers taking care of children, who are now operating in a non-formal way.
3) Family care services: small scale nurseries for children/families Expansion of private creches and **opportunities for childcare services market.** Study and reform the current normative framework to adjust the possible legislative, technical and financial barriers.

In order to implement these measures and especially the first one, the public expenditure in early childhood education will need to increase for the target to be achieved. In this chapter, a calculation of how much extra expenditure is needed for the expansion of public early education services is presented. See the Appendix A the Manual for the costing tool for further information.

3.3 Assumptions on the estimation of the expenditure needs

Population assumptions

In this section, the assumptions underlying the calculation are presented. The estimation of the expenditure is linked to the increase in childcare education according to the goals set in the policy. For the purpose of this costing exercise, the target rate of 30 and 60 % of children aged [0,1] and [2] years old respectively, are set to be achieved over the period 2023-26.

The target

Enrolment assumptions

Based on the latest policy debate, the target ratio of children enrolled (target ratio), the year to achieve this ratio (target year) and the initial year to start the programme are used to calculate the **number of extra children enrolled.**

Population forecasts are the starting point of the calculation. The UN World Population Prospects[11] projection is used to calculate the growth rates of the population aged 0, 1 and 2 years old in the Republic of Moldova. The medium variant prospect is used. Furthermore, the 0-2 years' old in Chișinău and the rest of the country are assumed to grow at the same rate as the national level. The latest historical data year available for the population is 2022. The number of usual resident population in Chișinău and the rest of the country by age and district are obtained from the National Bureau of Statistics.

The latest year available for children enrolled in early childhood education is for 2021. The same number of children enrolled is assumed for 2022 and 2023 (see Table 3.1).

Table 3.1: Number of children enrolled

Year	2021	2022	2023
Chișinău 0, 1	3	3	3
Chișinău 2	3,592	3,592	3,592
Rest of the country 0, 1	510	510	510
Rest of the country 2	9,532	9,532	9,532

Note(s): The number in Chișinău may seem small but this is according to the data published by the National Bureau of Statistics. See Table 2.5 in Annex 5 - Ed timp 2021 pt MEC.

Source(s): National Bureau of Statistics

11 World Population Prospects - Population Division - United Nations

How many children per group

In the particular estimation shown, the **number of children per group assumed is 25**, both for Chișinău and the rest of the country. This number is based on the data received after interviews with different policy makers.

Number of staff per group

In this particular estimation, the number of staff per group assumed is the following:

Table 3.2: Staff composition per group

Staff Composition of 1 Group by Chișinău, rest of the country and age range	Staff per Group
Children 0,1,2 years old (included) in Chișinău.	
Managers	0.21
Educators	3.00
Other	0.17
Children 0,1,2 years old (included) in rest of the country.	
Managers	0.21
Educators	3.00
Other	0.17

Source(s): Cambridge Econometrics from data obtained through National Bureau of Statistics and interviews.

The number of Educators is chosen based on information obtained in the interviews. The number of Managers and Other staff per group are calculations based on the statistics obtained for Urban and Rural areas, applied to Chișinău and the rest of the country respectively.

Wages

To estimate the average wage of the staff, the wage per level of seniority and number of staff by level of seniority are considered to obtain the weighted average wage for Chișinău and the rest of the country. In particular, the distinction urban/rural is again used and applied to Chișinău and the rest of the country respectively. The following wages are used:

Table 3.3: Staff wages, weighted average calculation, MDL

	Monthly wage (2020)
Wage for Chișinău managers	14,681
Wage for Chișinău educators	8,854
Wage for other staff Chișinău	6,095
Wage for rest of the country managers	14,725
Wage for rest of the country educators	8,886
Wage for other staff rest of the country	6,115

Note(s): These are the weighted average monthly wages for the different categories of staff.
Source(s): Cambridge Econometrics from data obtained through National Bureau of Statistics and nterviews.

Infrastructure (building) cost per group

The numbers used are MDL 3 million and MDL 1 million for Chișinău and the rest of the country respectively. These data have been obtained from the Parliament. One year for construction time is assumed. It is assumed that new infrastructure would be required in Chișinău, while outside Chișinău there is room for renovation and expanding existing facilities.

Maintenance cost per group

Approximately MDL 662 thousand per year is used for the estimation. Data obtained from the Government Budget.

3.4. Expenditure needs to increase children care

Following the Government goal to reach an enrolment rate in public creche services of 30% or higher by 2026 for children aged 0 & 1 years old and 60% or higher for children aged 2 years old, both for Chișinău and the rest of the country, the expenditure needed to increase children care during the period 2023-2026 would add up to a total of:

Table 3.4: Total cost of the programme 2023-2026

	Yearly cost aggregated
Total Cost (in MDL) of the programme	MDL 1,905,539,825
Total Cost (in EUR) of the programme	EUR 93,371,451

Source(s): Cambridge Econometrics estimates based on outline methodology.

For this calculation the statistical data and assumptions previously commented are applied.

Finally, to obtain the yearly cost, a linear distribution is followed so the total cost is apportioned over the different periods of time (2023-2026). This is summarized in Table 3.5 below, with disaggregation for both Chișinău and rest of the country. The data have not been adjusted for inflation.

Table 3.5 : Yearly cost of the programme

Costs (in MDL) of the Programme by area, year and category	2023	2024	2025	2026
Chișinău				
Infrastructure	MDL 677,228,120	MDL -	MDL -	MDL -
Maintenance		MDL 22,071,625	MDL 22,071,625	MDL 22,071,625
Pedagogical Staff		MDL 27,766,083	MDL 27,766,083	MDL 27,766,083
Chișinău total cost	MDL 677,228,120	MDL 49,837,708	MDL 49,837,708	MDL 49,837,708
Rest of the country				
Infrastructure	MDL 648,973,025			
Maintenance		MDL 63,163,044	MDL 63,163,044	MDL 63,163,044
Pedagogical Staff		MDL 80,112,141	MDL 80,112,141	MDL 80,112,141
Rest of the country total cost	MDL 648,973,025	MDL 143,275,185	MDL 143,275,185	MDL 143,275,185
Whole country				
Total Cost (in MDL) in the Whole Country by year	MDL 1,326,201,145	MDL 193,112,893	MDL 193,112,893	MDL 193,112,893
In EUR	€ 64,983,856	€ 9,462,532	€ 9,462,532	€ 9,462,532

Source(s): Cambridge Econometrics estimates based on outlined methodology.

3.5 Direct employment effect

The direct employment effect, both in total and disaggregated by educational staff categories and region, is shown in Table 3.6 below. Most of jobs available will be for educators (2,623 jobs) and in the rest of the country.

In total, the number of direct jobs generated after the programme implementation (2026) is approximately 2,962 jobs in the Republic of Moldova.

Table 3.6: Direct employment effect disaggregated by educational staff categories

Category of staff	Chișinău	Rest of the country
Managers	48	138
Educators	677	1,946
Other	39	112
Total Staff	764	2,197

Source(s): Cambridge Econometrics own calculation based on outlined methodology.

Table 3.7 shows the total employment generated after the programme, once both direct and indirect effects are considered. Over the period 2024-26 the direct effects makes the highest impact on the educational sector, whereas in 2023 the indirect effect derived from the initial expenditure mostly expands employment in the industry and construction sectors.

Table 3.7: Total additional employment generated (including indirect and direct jobs)

Economic sector	2023	2024	2025	2026
Agriculture, forestry; Fishery	276	79	79	79
Industry	4295	512	512	512
Construction	1999	74	74	74
Trade; Hotels and restaurants	488	172	172	172
Transportation, Communications	84	26	26	26
Public administration; Education; Health and social work	44	1016	1016	1016
Other	199	59	59	59
Total	7384	1938	1938	1938

Source(s): Cambridge Econometrics own calculation based on outlined methodology.

4. INDIRECT EFFECTS OF INCREASE IN CHILDCARE EXPENDITURE

4

4.1 Introduction

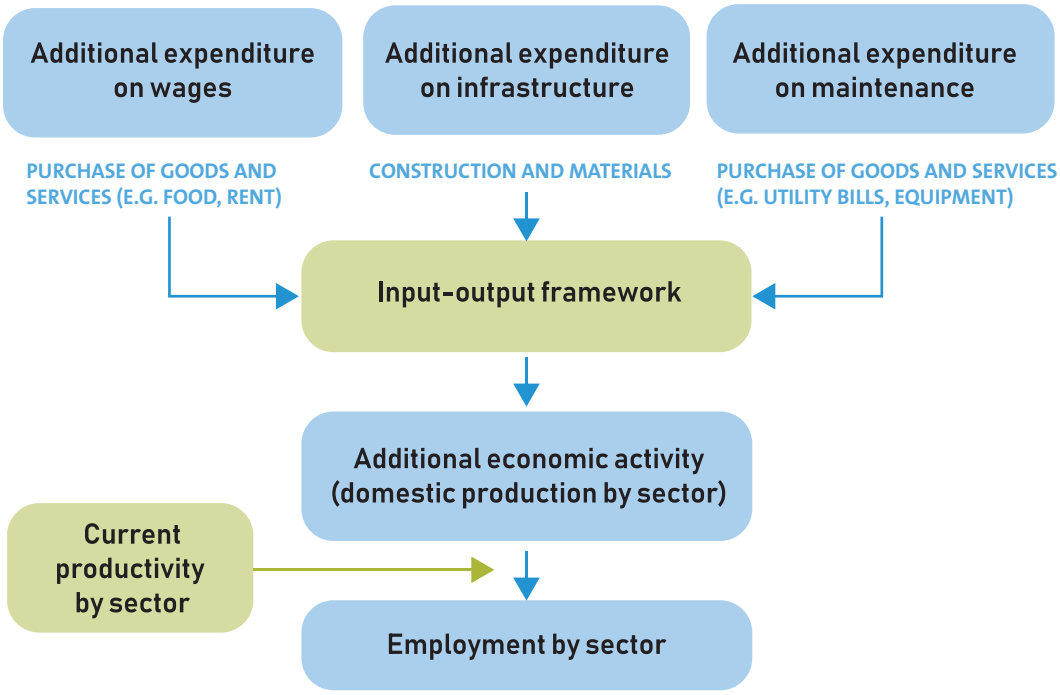
This chapter summarises the indirect employment impacts of the expenditure increase estimated at Step 1 (as detailed in Chapter 3).

The indirect impacts of increased childcare provision are estimated based on a fixed coefficient multiplier method applied to an Input-Output table. The Input-Output table is a representation of the economy's monetary transactions between productive sectors, final demand of products and income. It is a representation of the sectoral composition of GDP and its components both on the expenditure side (e.g. investment, government expenditure, consumer expenditure) as well as the income side (e.g. value-added). As the Input-Output multiplier focuses on transactions between sectors and the composition of supply, the results would only be for the broad generation and use of additional income and expenditure. To reach the employment implications of additional expenditure, further information on productivity rates by sector is used to estimate employment.

Figure 4.1 outlines the Input-Output-based method. Information from Step 1 (discussed in Section 2.7) is fed through the Input-Output framework to estimate the increase in economic activity. The approach differentiates between the three main types of expenditure resulting from Step 1 as follows:

1. Step 1 expenditure of staff wages and salaries is treated as household expenditure and results in expenditure on household goods and services (such as food, rent, bills).
2. Step 1 expenditure on infrastructure is expenditure is translated as increased activity in the contractions sector, which in turn would feed in additional demand of goods and services in sectors part of the construction supply chain.
3. Step 1 expenditure on maintenance is treated as expenditure on utility bills and purchase of other goods and services (including food).

Figure 4.1: Outline of the fixed multiplier analysis



Source(s): Cambridge Econometrics.

The additional economic activity determined by the Input-Output framework is translated to additional employment by applying productivity rates by sector.

Information on productivity rate assumptions, as well as other assumptions made under this framework are presented in Section 4.2.

4.2 Assumptions

Input-Output framework

The Input-Output table used for the analysis is the based on the Republic of Moldova National Accounts 2014 publication of the National Statistics Bureau[12]. The table's sectoral detail is 53 sectors by 53 products. Using the Leontief inverse approach, the fixed multiplier coefficients were calculated on based on this table.

Limitations

The main limitation of the Input-Output framework is that the resulting coefficients are static across the entire system. This means that the economic structure captured by the Input-Output table used is fixed and may not capture structural changes that happened more recently. It is a linear system, which means the resulting increase in economic activity is proportional with the expenditure introduced in the system. The framework does not capture economies of scale or non-linear effects, such as technology improvements.

12 A more recent version of the table was not available.

Step 1 expenditure allocation

From Step 1 outlined in Section 2.7 the following expenditure results are fed through the Input-Output framework:

1. Expenditure on wages and salaries
2. Expenditure on new construction
3. Expenditure on building maintenance

The above expenditure categories need to be allocated to sectors/products before being introduced into the framework.

Wages and salaries

Only a proportion of wages and salaries are expected to be spent by households. This value reflects the general income tax level. At present it does not reflect savings, but a savings rate can be imposed in the framework. The proportion of wages and salaries that is spent is allocated to sectors based on fixed shares. Table 4.1 summarises the allocation of consumer expenditure to economic sectors. About 76% of total consumer expenditure is allocated to six sectors. Retail trade, Real estate and Food, drink and tobacco receive the bulk of the expenditure (33%, 16% and 12% respectively).

Table 4.1 Allocation of household expenditure to economic sectors

Sector Code	Sector description	Share of expenditure, %
G	Retail trade	33
K70	Real estate (e.g. rent)	16
D15	Food, drink and tobacco manufacturing	12
H	Hotels & catering	6
D23-24	Manufactured fuel	5
I64	Post and telecommunication services	4

Source(s): Cambridge Econometrics own calculation based on proxy data from Romania.

Infrastructure and maintenance costs

Infrastructure costs are allocated to the construction sector. Maintenance costs are evenly split between utilities and construction.

Income tax

The income tax rate assumption is 12%.

Limitations

The limitation of these assumptions is that the shares and rates are fixed Furthermore, currently only public sector expenditure costs are taken into account.

Productivity

Table 4.2 summarises the productivity assumptions used to estimate employment by sector generated by the economic activity estimated by the Input-Output framework.

Table 4.2: Productivity assumptions by sector

Code	Description	Productivity, person/ million MDL
A	Agriculture, hunting & fishing	5.8
B+C+D+E	Industry	1.5
F	Construction	1.4
G+I	Wholesale and retail trade; Hotels and catering	2.9
H+J	Transport & storage; Information and Telecommunications	1.7
O+P+Q	Public administration, Education; Health & social work	5.0
K+L+M+N+R+S+T	Other activities	1.5

Source(s): Republic of Moldova National Statistics Bureau.

Limitations

The productivity shares are fixed and do not capture any changes in technological development, skills and other labour market characteristics.

4.3 Summary of results

Based on the total expenditure requirements estimated in Step 1 (see Chapter 3) the Input-Output framework leads to additional economic activity as summarised in Table 4.3. The main sectors expected to benefit and Industry and Construction, resulting from the need to build new childcare facilities. Over the longer term, sectors supplying consumer goods are also expected to benefit from the additional consumer expenditure (driven by increase in disposable income).

Table 4.3 Additional domestic demand, million MDL

	2023	2024	2025	2026
Agriculture, hunting & fishing	48	14	14	14
Industry	2784	332	332	332
Construction	1392	52	52	52
Wholesale and retail trade; Hotels and catering	171	60	60	60
Transport & storage; Information and Telecommunications	50	15	15	15
Public administration, Education; Health & social work	9	6	6	6
Other activities	129	38	38	38

Source(s): Cambridge Econometrics own calculation based on outlined methodology.

Table 4.4 summarises the indirect employment results. Please note that this employment is estimated to be in additional of the pedagogical staff requirements calculated in Step 1 (see Table 3.6). In the first year, an additional 7,384 persons are needed as a result of the need to build new childcare facilities. After the building requirements are achieved, the additional employment requirement is smaller, at about 950 jobs. While Industry and Construction sectors benefit short-term, over the longer terms consumer-oriented services and manufacturing sectors are expected to benefit.

Investment in the first year of the intervention triggers indirect effects through out the economic sectors, both coming from both education and construction sectors.

Table 4.4 Indirect employment by sector, persons

	2023	2024	2025	2026
Agriculture, hunting & fishing	276	79	79	79
Industry	4295	512	512	512
Construction	1999	74	74	74
Wholesale and retail trade; Hotels and catering	488	172	172	172
Transport & storage; Information and Telecommunications	84	26	26	26
Public administration, Education; Health & social work	44	28	28	28
Other activities	199	59	59	59
Indirect jobs	7384	950	950	950
Direct jobs		987	987	987
Total additional employment	7384	1938	1938	1938

Source(s): Cambridge Econometrics own calculation based on outlined methodology.

5. SOCIAL, DEMOGRAPHIC AND ECONOMIC IMPACTS

5

5.1 Introduction

This chapter summarises the possible increase in GDP and employment as a results of increased in female participation. In Section 5.2, the economic benefit is estimating by assuming a decline in the gender gap in labour participation. In Section 5.3, the female employment is discussed on terms of where the future jobs might be.

5.2 Economic benefits of female labour participation

This section describes one scenario that was developed to estimate the economic impacts of gender equality measures.

The scenario looks at the economic impacts of increased female labour participation and is compared to a baseline case that shows the continuation of current trends. The scenario is based on the implementation of increase in childcare services that lead to increases in female participation by 2037.

The relationship between the participation of women in the labour market and GDP depends of the level of economic development of the country (Atoyan and Rahman, 2017). In low-income economies, women need to work in family enterprises or the informal sector, so female labour force participation is high. In middle-income economies, female participation is lower (bottom of the "U"), due to both social barriers and competition from men on the labour market. In developed economies, access in services and improvement in education for women increase female labour participation.

In the EIGE study on the Economic Benefits of Gender Equality in the European Union (EIGE, 2017), the measures aimed at closing the activity rate gap between men and women would generate a GDP per capita increase of 3.2 to 5.5% in 2050. This result is explained by the fact that higher labour participation increases labour supply. In the short run, the effect would be an increase in unemployment because labour demand respond to the increase in the supply is not immediate. Therefore, wage rates might adjust downwards, which could boost employment and industry competitiveness. At a macroeconomic level, a larger workforce increases productive capacity and in the long run, higher GDP and higher employment levels.

According to the UNFPA Generations and Gender Survey results, employment in high-skill occupations and economic stability are associated with a higher probability of having long-term fertility intentions, thus supporting women to reach desired fertility. Households with higher income sources are more likely to have stronger fertility intentions. Increased economic insecurity, as expected, lead to lower changes of having children in the short run[13].

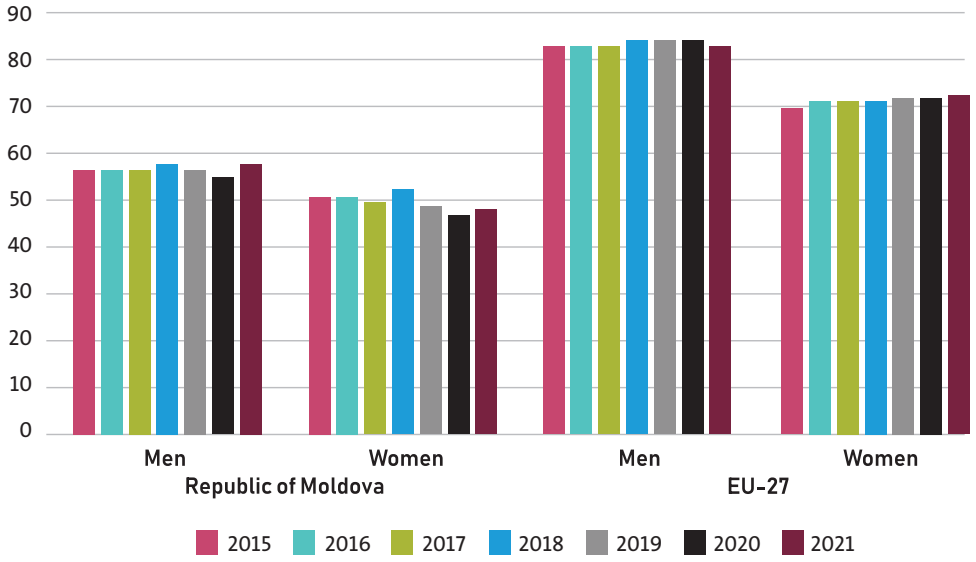
13 https://moldova.unfpa.org/sites/default/files/pub-pdf/explaining_fertility_intentions_in_the_republic_of_moldova.docx.pdf

Considering current demographic decline, the availability of childcare services and equal female labour participation could have the potential to influence current population trends and balance the population pyramid.

Where Republic of Moldova stands

Figure 5.1 shows the activity rates by sex over the period 2015-21. On average, the gender activity gap between men and women is less than 10pp in the Republic of Moldova, while in the EU-27 it is over 10pp. Both men and women in the Republic of Moldova need to increase their participation on the labour markets by around 25pp to reach the EU average activity rates.

Figure 5.1: Evolution of activity rates (%) for age 20-64 by sex in Republic of Moldova and EU-27, 2015-21



Higher female labour participation is associated with higher GDP per capita

Note(s): *break in the series: in 2019 for Republic of Moldova and in 2021 for EU-27.
Source(s): Eurostat (enpe_lfsa_argaed; lfsa_argan)

Table 5.1 compares the gap in activity rates[14] in the Republic of Moldova, EU average, Romania and Bulgaria. In the Republic of Moldova and Bulgaria, the gender activity gap increased over time, while in Romania it is relatively stable (the ±1pp difference). EU as a whole has experienced a 2pp reduction in the gap in the last seven years.

Table 5.1: Gender activity gap (%), 20-64 age group

Country	2015	2016	2017	2018	2019*	2020	2021*
Republic of Moldova	9.9	11.0	12.6	9.8	14.7	15.3	16.8
EU-27	15.3	14.9	14.6	14.5	14.3	14.2	13.2
Romania	10.8	11.2	11.0	11.6	11.4	11.9	11.4
Bulgaria	24.8	24.8	23.5	24.1	24.4	24.5	26.7

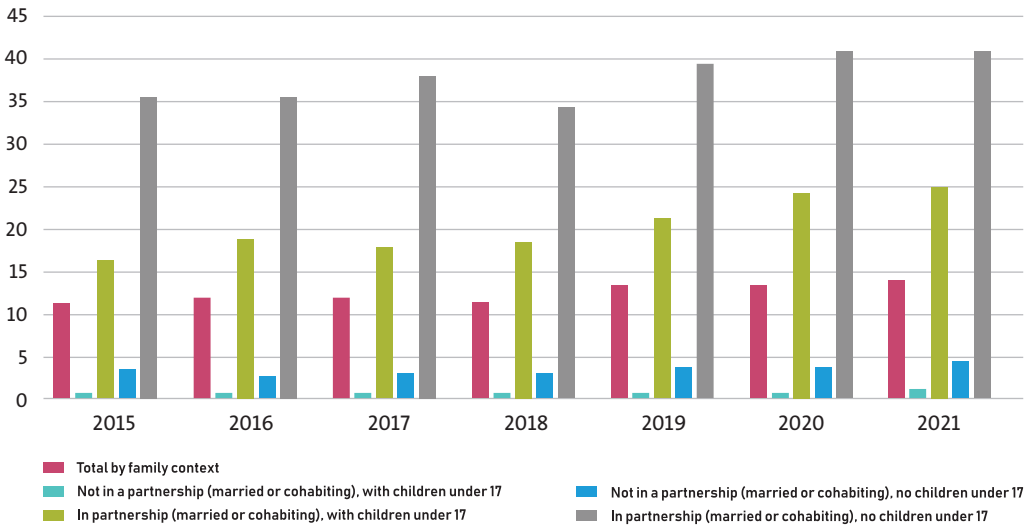
Note(s): *break in the series: in 2019 for Republic of Moldova and in 2021 for EU-27.
Source(s): Cambridge Econometrics based on Eurostat (enpe_lfsa_argaed; lfsa_argan).

14 Following the EIGE report (EIGE, 2017), the gender gaps in activity rates of men and women are calculated as: GapAR=1-A_rateWA_rateM (5.1) where A_rate_w is the activity rate of women aged 20 to 64 and A_rate_m is the activity rate of men from the same age group, based on Labour Force Survey data.

According to the UNFPA Moldova and CPD (2021) study on policies for desired fertility[15], care responsibilities prevented or discouraged most women in the Republic of Moldova to be economically active.

In Figure 5.2, most women who are inactive on the labour market are with a partner and with children below 17 years' all, i.e. around 41% in 2021. Single women and no children are the ones least inactive on the labour market (in 2021 around 1.4% for housewives and 6% for other situation[16]).

Figure 5.2: Inactivity rate (%) of women (housewives) aged 15+, by family context, 2015-21



Note(s): Category of inactivity: Housewife.
Source(s): National Bureau of Statistics (Inactivity rate of persons aged 15 years and over, main reason for not working, by age group and sex, 2015-2021[17]).

Limited access to early education public institutions has direct and significant impact on the employment of women, particularly of those who have children aged 0-3. The interpretation of the 2020 Gender and Generations Survey data by gender, employment status and presence of children up to 6 years old (reflected in the Figure 5.3), reveals clearly a much lower involvement of mothers in paid work. Particularly, the difference is much more significant in the case of those who have children of pre-school age (up to 3 years). Thus, arises the existence of a double inequality, both from the perspective of the presence of children among women and of the age of children. In this context, in addition to the perpetuation of gender stereotypes regarding the need for greater involvement of mothers in the upbringing and care of children it cannot be exclude the fact that a decisive cause of this inequality may be considered the limited availability of public creches.

Assuming an increase in labour participation

One of the outcomes of the policy to expand the current provision of early

15 Poliies for the desired Fertility, 2022, UNFPA, CPD, https://moldova.unfpa.org/sites/default/files/pub-pdf/policies_for_the_desired_fertility_national_creche_fund_to_support_parents.pdf

16 Category of inactivity other than: Pupil, student; Pensioner; Housewife; and Persons working or looking for a job abroad.

17 https://statbank.statistica.md/PxWeb/pxweb/en/50%20Statistica%20gender/50%20Statistica%20gender__GEN01/GEN011490mun.px/?rxid=5360837a-13b5-4912-a2e0-12892e96d2ab

childcare could be the increase in female labour participation.

Based on the historical data showed in Table 5.1, the baseline (business-as-usual scenario) assumption is that the gap will continue it increase to around 25% in 2037 (by projecting historical data forward 15 years). In the scenario, the estimates of potential decrease in the gender gap in activity rates presented in Table 5.2 are based on assumptions to 2037 about the effectiveness of this policy measure compared to the baseline.

Care responsibilities represent an important barrier to labour participation

Based on the EIGE report (EIGE, 2017), two variations of the scenario are considered, each assuming a different rate of progress to close gender gap by 2037 compared to the baseline:

1. Rapid progress, assuming a faster increase in female labour participation due to increase in childcare provision; and
2. Slow progress, assuming a slower increase in female labour participation.

Table 5.2: Estimates of the gender gap in participation rates in different scenarios (%)

	2021	Baseline 2037	Slow decrease by 2037 (75% Baseline)	Rapid decrease by 2037 (50% Baseline)
Republic of Moldova	16.8	25.1	18.8	12.6

Source(s): Cambridge Econometrics estimates based on outlined methodology.

The effect of closing the gender activity gap on GDP per capita

Raising female labour participation to close the activity rate gap will increase labour supply as a result of additional women entering the labour force. The growth rates of GDP per capita as a result of an increase in the female labour force activity rates in the EU from the EIGE study form the basis of the estimates in Table 5.3. An increase in labour participation of women of 8.4% (slow decrease) and 16.8% (rapid decrease) compared to the baseline can lead to an increase in GDP per capita of 1.2% and 2.6%, respectively, in Republic of Moldova compared to otherwise by 2037.

The results are based on the assumptions that male activity rates remain stable by 2037 and that the economy of Republic of Moldova will react to the change in activity rates similarly to the EU economies.

Table 5.3: The effect of increasing women activity rate on GDP per capita, % difference from baseline

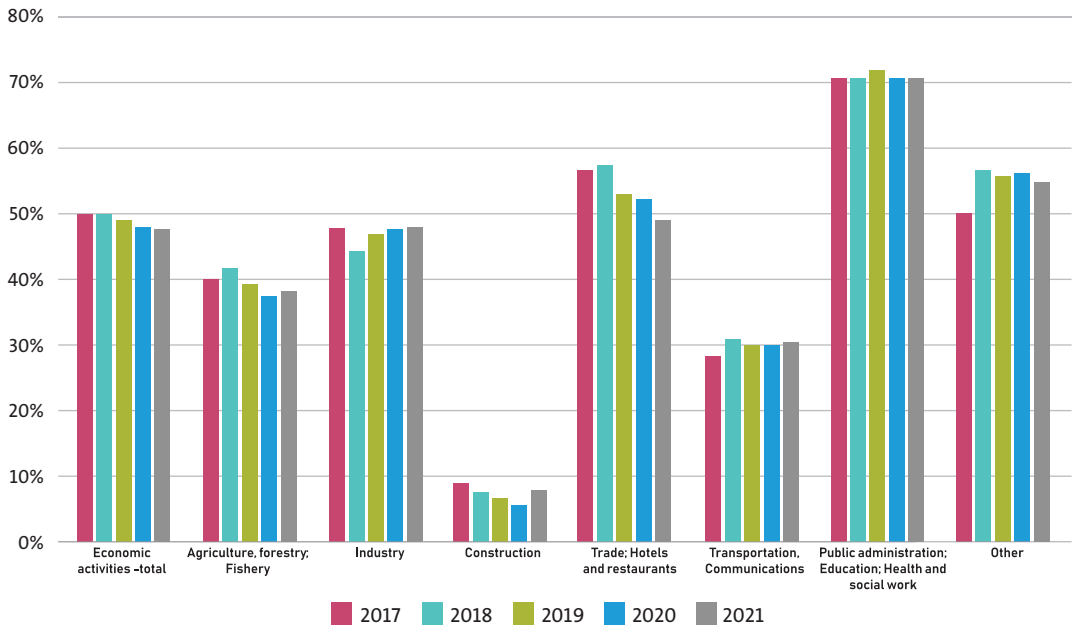
	Activity rates Slow 2037	Activity rates Rapid 2037	GDP Slow 2037	GDP Rapid 2037
Republic of Moldova	8.4	16.8	1.2	2.6

Source(s): Cambridge Econometrics estimates based on outlined methodology.

5.3 Current and future trends of female employment

In the last five years, the share of female employment in the total employment in Republic of Moldova has been declining slightly (see Figure 5.3). The decrease is likely a result of the decline in female employment in Trade; Hotels and restaurants during the Covid pandemic.

Figure 5.3 Share of female employment in total by sector, shares



Source(s): National Bureau of Statistics, Employed population by economic activities, level of education, age groups, sex and area, 2014-2021

Looking employment by sector, the sectors with the lowest share of female employment are Construction and Transport & Communications. The sector with the highest share of female employment is Public administration; Education and Health and social work. If these trends are expected to continue, it would imply that women would benefit more from the increased economic activity discussed in Step 1 (Chapter 2.7) and Step 2 (Chapter 3.5), as a large proportion of the additional employment is expected to be generated in Education.

Table 5.4 summarises the additional female employment resulting from the increased expenditure on childcare. As expected, the Public administration; Education; Health and social work sector is expected to see the largest increase over the long-term. Relatively large increases in female employment are expected in Industry and Trade; Hotels and restaurants sectors.

Over the short-term, while additional childcare facilities are being constructed some Industry sectors are also expected to benefit.

Table 5.4 Additional female employment from increased childcare provision, persons

	2023	2024	2025	2026
Agriculture, forestry; Fishery	105	30	30	30
Industry	2,055	245	245	245
Construction	157	6	6	6
Trade; Hotels and restaurants	240	84	84	84
Transportation, Communications	25	8	8	8
Public administration; Education; Health and social work	31	1,007	1,007	1,007
Other	109	32	32	32
Total	2,722	1412	1412	1412

Source(s): Cambridge Econometrics estimates based on National Bureau of Statistics.

Overall, in 2026 around 58% of the additional jobs generated in Step 1 and 2 of the methodology are expected to be held by women.

6. FISCAL REVENUES

6.1 Introduction

This chapter summarises the fiscal impacts of increased childcare provision. It includes both the increased expenditure estimates from Step 1, as well as potential revenues from the increased employment estimated in Steps 1, 2 and 3.

6.2 Framework for estimating fiscal impacts

Table 6.1 summarises the costs and revenues taken into consideration for the assessing the fiscal revenues. The additional costs are all estimated in Step 1 and reflect the expansion in childcare provision. On the revenues side, the bulk of the additional revenues are expected to be from income taxes as the demand for labour increases. The VAT revenues from increased economic activity (Step 2) are also considered.

Table 6.1: Costs and revenues considered

Additional expenditure requirements	Additional revenues
Wage costs including social security payments (Step 1)	Income tax revenues from pedagogical and support staff (Step 1)
Infrastructure costs (Step 1)	Income tax revenues from indirect impacts (Step2)
Maintenance costs (Step 1)	VAT revenues from additional economic activity (Step 2)
	Income tax revenues from increase participation to the labour market (Step 3)

Source(s): Cambridge Econometrics

For the basis of this calculation, we have assumed a basic income tax rate of 12% and a standard VAT of 20%.

Income & wages

In estimating the wage bill resulting from the additional indirect employment (Step 2), the following average monthly wage rates shown in Table 6.2 have been used. These wage rates are based on 2021 Monthly average earnings data published by the Republic of Moldova National Statistics Bureau[18].

18 https://statbank.statistica.md/PxWeb/pxweb/en/30%20Statistica%20sociala/30%20Statistica%20sociala__03%20FM__SAL010__serii%20anuale/SAL010100.px/?rxid=4eec3dd5-755a-4e4e-92de-3dc2d391f3a9

Table 6.2 Average wage rates by sector assumptions for indirect employment

Economic sector	Monthly average earnings, MDL
Agriculture, hunting & fishing	5,691
Industry	8,242
Construction	8,136
Wholesale and retail trade; Hotels and catering	6,430
Transport & storage; Information and Telecommunications	14,669
Public administration, Education; Health & social work	9,691
Other activities	9,380

Source(s): Cambridge Econometrics own calculation based on Republic of Moldova National Statistics Bureau data.

Gross and net value added

As VAT is applied to net value added while Step 2 estimates gross output, it was assumed that net value added is approximately 75% of gross output. This assumption is applied across all sectors. The current estimate of 75% is based on 2021 National Accounts data for financial institutions.

Limitations

One limitation of this approach is that it is assumed that all employment (and thus basis for revenue generation) is additional to business as usual (i.e. there is no job switching into the new openings). This means that it is possible to overestimate the income tax revenues, as we assume all new labour requirements will be filled by people not currently in employment. Furthermore, changes to social security benefit payments are not captured.

Another limitation is that the full range of taxation is not considered when it comes to changes in domestic activity and GDP, which means part of the additional revenue stream is underestimated.

6.3 Results

Table 6.3 summarises the costs and revenues from increased childcare provision. The results are preliminary and missing some components.

Table 6.3 Cost and revenues, million MDL.

	Costs		Revenues
Staff wages (Step 1)	324	Income tax revenues from pedagogical and support staff (Step 1)	39
Infrastructure (Step 1)	1326	Income tax revenues from indirect impacts (Step2)	119
Maintenance (Step 1)	256	VAT revenues from additional economic activity (Step 2)	920
Total	1906		1078

Source(s): Cambridge Econometrics own calculation.

Potential savings form reduced social benefit payments

While it is impossible to estimate how many of the women additionally employed because of direct and indirect effects (see Table 5.4), some reduction in social benefit payments should be expected because of increased employment. Based on statistics on social benefit payments, in February 2023, the number of applicants for benefits (female +children) was of 12,763 with the average benefit payment of MDL 1610.46. Table 6.4 below estimates the reduction in benefit payments over 2023-26, based on the assumptions that:

The number of applicants for 2024-26 is the same as the latest 2023 value;

Thew average benefit payment is the same as the latest 2023 value;

All women who gained employment as outlined in Table 5.4 were receiving benefits.

Table 6.4 Potential reduction in benefit payments

	Business as usual	**With increased childcare provision**
Average annual applicant number persons)	12,763	11,024
Average benefit payment (MDL)	1652	1652
Total benefit payment 2023-26 (million MDL)	1012	874

Source(s): Cambridge Econometrics own calculation.

7. POLICY RECOMMENDATIONS

7.1 Introduction

Chapters 6 and 7 have shown that further investments into childcare in Moldova are worthwhile. Costs are largely offset by the benefits of affordable and qualitative childcare in terms of GDP growth, fiscal revenues, reduced poverty, increased social justice and child wellbeing, strengthen demographic resilience and fertility intentions. In this chapter the challenges for implementing an increase of childcare offer for the 0-2 years old in Moldova are discussed (Section 7.2). This is based on a review of literature on female employment and inequalities in Moldova, public hearings, consultations and policy papers regarding reforms of the childcare system (a report produced by UNFPA Moldova and Centrul Parteneriat pentru Dezvoltare (CPD), Popescu (2014 and 2015) , Memo 2015, CNAS 2021, Oceretnîi and Bătrânescu (2020) as well as 10 interviews (individual interviews and focus group discussions) conducted with key stakeholders from different government institutions, research institutions and experts and NGOs (Ministry of Education, Ministry of Labour and Social Protection, Ministry of Infrastructure and Regional Development, the National Employment ANOFM, the Partnership Center for Development (CPD), independent experts, UNFPA, the Alliance of Active NGOs in the field of Child and Family Social Protection (APSCF), the NGO Părinți Solidari and the NGO Ask a Mom). Finally, recommendations for going forward are made, based on the insights of Chapter 2 and good practice in EU and OECD countries (section 8.3).

7.2 Challenges for extending affordable and qualitative childcare options

It is important to uncover and tackle challenges to run good quality system for early education and care in Republic of Moldova, in order to expand it in a most efficient way.

At EU level, the Council Recommendation includes a Quality framework, which identified 5 key components of a qualitative system of early education and care19:

- access to early childhood education and care;
- training and working conditions of staff in charge of early childhood education and care;
- definition of appropriate curricula; governance and funding; and
- monitoring and evaluation of systems.
- This framework is useful for assessing current challenges in Republic of Moldova.

19 https://education.ec.europa.eu/education-levels/early-childhood-education-and-care/about-early-childhood-education-and-care

Split and unclear responsibilities

Interviews with stakeholders point to issues linked to split responsibilities, lack of cooperation and shared commitment between different institutions with regard to childcare provision, in particular for young children aged 0-2. Responsibilities for childcare are split between the Ministry of Education (on educational issues, such as the curriculum), the Local Public Administrations (enrolling children, maintaining buildings, etc), and the Ministry of Infrastructure and Rural Development. However, important to state that the Ministry of Labor and Social Protection is responsible for coordinating the implementation process of the National Program on Care Services for Children under 3 years of age

The Ministry of Labour and Social Protection is a new player in the field and may need some time to acquire the capacity to manage the implementation of public creches or support the expansion of alternative childcare facilities.

Moreover, it seems that in Moldova there is no institution has been designated so far for implementation of early education and childcare for children aged 0-2 years. The lack of clear responsibility leads to a lack of transparency about early education and childhood provision, be it public or private.

The consequences of working in silos and dealing with different budget lines without a structured information sharing between agencies renders it impossible to get a reliable overview of the state of play of enrolment of children in childcare. Also, it hinders to establish a comprehensive strategy.

Systems with split responsibilities exist in a number of countries. They require in general a more complex governance structure. In a number of other countries, integrated systems are run. Research suggests that integrated systems are associated with better early childhood education and care quality, enhanced universal entitlement, more affordable access, and better qualified staff (ILO, 2018). This would mean that split responsibility systems would need a high level of cooperation.

International donors (in particular UNFPA) are helping with establishing a plan for early childhood education, considering the needs and demographic trends. The government has approved a National Programme for supporting childcare services Order of the Ministry of Labour and Social Protection no. 67 of April 28, 2023; this a key step in the development of a good quality system for early childhood education and care.

Monitoring

As the vast majority of private childcare facilities are not registered, there is no data that would be regularly published showing the enrolment of children, including the age group 0-2. Also data on enrolment of children from age 3-7 lack clarity.

Quality of care

Quality of care is essential for the wellbeing of children and the trust of parents to take-up of childcare. Eurofound (2013) showed that better childcare access was positively associated with individuals' perceived quality of services as well as women's

employment. Access to childcare was assessed, taking into account the cost of services, their availability, access (distance or opening hours) and the quality of care as perceived among service users.

Key criteria for quality of care include children to staff ratios, pedagogical concepts and health and safety regulations, as well as proximity.

In the Republic of Moldova, for public institutions it is regulated that on average the one adult caretaker should not look after more than 10 children aged 0-2 and 20 children aged 2-7 (according to the Ministry of education the range of children aged 0-2 per caretaker should range between 8 and 12 children). Based on practices in the European Union it is advisable to opt for the lower children per caretaker or educator ratio for children aged 0-2 years. Good practice from high income economies in the European union shows an even lower staff per children ratio. High-level benchmarks 3 children for the 0-1 ones and up to 5 children for the 2-3 years old (UN WOMEN and ILO 202) For example, in East German regions the ratio caretaker/educator ratio for 0-3 would be around 5 (Bock-Famulla et al, 2021), while it is lower in West German regions. There is a trade-off to be made between high quality of early childhood care, which is not only desirable for the child's wellbeing but also for the trust of parents to take up this childcare offer to allow mothers to participate in the labour market, and the number of places for young children that can be offered.

At the moment, there are no specific requirements for children to teacher ratio nor the qualification of teacher nor any guidelines or recommendations for pedagogical concept for private childcare institutions (including the "alternative childcare facilities"). However, draft guidelines are under consideration and currently undergoing an approval process. Also there seems to be no pedagogical concept for public institutions caring for the 0-2 years old, as the legislation perceives that at this young age, children need caring and not education. Good practice in European countries shows that public creches have pedagogical concepts even if they are run by the social services and not by the education departments of local administrations or Ministries. At this young age the development of socio-emotional skills, language skills and values and a number soft skills are important. The skills development for young children benefits from well-trained staff. Some countries across the OECD, including in Northern Europe have started in the years 1990s and 2000s (and later also other countries such as Germany, Spain, Ireland) to develop curricula for the whole age range from 0-6 years. These curricula are in general very flexible, broad and comprehensive (European Commission, 2014; CAF, 2016, European Commission, Council Recommendation on High Quality Early Childhood and Care, 2018[20]). In addition, teacher qualifications and competitive salaries serve as a quality indicator of both employment and services.

Sanitary regulations, applying to institutions caring for children aged 2-7 in Republic of Moldova seem to be too strict according to the stakeholders interview. They set high and very detailed mandatory standards on buildings which do not comply with feasibility of accommodating childcare facilities in old buildings and the costs meeting the standards would induce in old and new buildings. This may hinder the expansion and even the modernisation of public childcare institutions and most

20 https://eur-lex.europa.eu/resource.html?uri=cellar:05aa1e50-5dc7-11e8-ab9c-01aa75ed71a1.0003.02/DOC_1&format=PDF

importantly hinder privately run institutions to ask for getting licensed. At the same time, there are no regulations at all for institutions caring for 0-2 years old children, although draft guidelines are currently undergoing an approval process. However, they are already provided for alternative care services in the draft of the Government Decision for the approval of the Regulations regarding the organization and operation of alternative child care services.

Access to affordable childcare

Access to public childcare above the age of 2, is highly uneven across the country. The demand is excessively high in the large cities, while this is not the case in rural areas. Availability of childcare in the grey area of private providers for the 0-2 years ones may be better in urban areas for people who can afford private creches. According to stakeholder interviews many mothers hire babysitter, which are expensive, and thus not affordable for many mothers. A few "social creches" have been set up for vulnerable groups.[21] According to stakeholder interviews, the quality of childcare provision in this grey area is very variable, from being well above the standard in public institutions to being well below and risky for the children.

7.3 Recommendations

Expand institutionalised early childcare services and promote implementation of family friendly policies in public and private sector

It is recommended to implement the goal of the Government to reach an enrolment rate in public creche services of 30% or higher by 2026 for children aged 0 & 1 years old; up to 60% for children aged 2 years. Implementation of this objective should be linked, as foreseen by the government and new legislation to create three types of alternative childcare services to improve work-life balance (formalise home-based individualized child care services; nurseries for children/families with special needs, and expansion of private creches and opportunities for childcare services market).

It is recommended to focus in particular on expanding family friendly policies and private forms of institutionalised childcare (quantity and quality) in addition to improving quality of individualised home-based care (only quality). Steps and activities towards expanding offer would include:

- Set incentives for alternative childcare (as foreseen in the legislation) to expand offer of childcare, in particular for children aged 0-2 years. This includes
- reformed access to licensing (see below on safety and health regulations)
- financial support. Co-financing alternative childcare provision is a way to pool resources with objective to improve the offer and allow varied institutionalised early education and childcare offers.

21 https://www.unicef.org/moldova/comunicate-de-pres%C4%83/o-cre%C8%99%C4%83-social%C4%83-fost-deschis%C4%83-la-glodeni; https://odoras.md/copii/gradinita/cresa-gratuita-pentru-copii-de-la-4-luni-pana-la-3-ani-afla-cum-poti-beneficia-de-acest-serviciu/

- Information and awareness raising among employers for setting up combined creches (0-3 years) and kindergartens (3-7 years) for their employees. Provide counselling and support starting in the concept phase. Supporting alternative childcare facilities to get licensing.
- Support public and privates sector companies to implement flexible working arrangements and other types of family friendly arrangements.
- Expand offer in a joint effort of private providers, NGOs, employers and the local government to provide childcare for 0-7 years old in the largest cities, where demand is high and waiting lists long. Expand offer for both public and private institutionalised early childhood and care for 0-2 years old in rural areas (even if this is more expensive in case there are only few children). Allow for flexible implementation in rural areas (in particular allow for lower children to staff ratios if there are low numbers of children enrolled, as is already the practice).
- Elaborate a concept and promote the establishment of childcare facilities for children with special needs, by combining resources.

Improve governance

Implementing a system for early childhood education and cares calls for a performant governance system. This system increases return on investment in the expansion and formalisation of early childhood education and care. To improve the governance system it is recommended to:

Define clear responsibilities for leading the implementation for public childcare provision at different ages, including for the 0-2 years old children.

Set up a coordinating department / unit at the level of the government (or define a ministry to take the lead).

Continue to plan about expanding childcare offer according to socio-demographic factors and use of data/evidence

Increase transparency about childcare public and private childcare options.

Establish a set of key performance indicators (KPI). These could include e.g. child-staff-ratio; waiting lists for public creches (and kindergartens); enrolment rates in public and alternative institutional child care, detailed by type of childcare institutions (employers, other private creches, creche groups in private kindergartens, childcare for children with special needs, childminders (home-based); number of formalised babysitters or respective agencies.

Improving the quality of childcare

The quality of childcare rests mainly on the staff deployed, both in terms of quantity and of quality of the services they can perform. For the group of 0-2 years old children, the children to staff ratio is a crucial indicator for quality. Trust in the quality childcare is crucial for parents. Investments in staff to assure a higher quality in existing childcare provision and for expanding qualitative offers should take the following into consideration:

- It is important to aim for having children to caregiver and educator ratios of 8 children at the maximum, and in the long-term to lower it to a ratio between 5 and 8 at both public and private institutions. To limit costs it advised to employ mixed staff for larger groups, including assistant educators and assistant caregivers or assistant child nurses (some flexibility should be possible as regards the formal qualifications). This would require having diversified job profiles and wage grades.
- Elaborate training material for providing training to educators and caregivers for children aged 0-2, and another set of training material for children aged 2-7, that can be used for upskilling staff in alternative childcare facilities and for home-based care.
- Train staff for alternative childcare (both for home-based care e.g. child minders, babysitters and private/public institutional early childhood education and care) on child-centered methodology and enhance knowledge and competences of staff to work with small children with special educational needs and CWDs to ensure inclusiveness.
- Promote and support the elaboration of educational concepts and flexible curricula for different forms of childcare offers, providing information and guidance on good practices. Support can be given through issuing non-binding guidelines and through providing counselling by pedagogical specialists.
- Promoting the establishment of employer-based childcare facilities helps to improve proximity issues (as parents would not need extra time for bringing their children to a childcare facility if there is no availability near the place of living).
- Adjust and use the already existing guides, training curricula, mentoring methodologies, technical specifications for works and goods developed by UNICEF and approved by MER which are already available.

Formalisation of alternative childcare options

A wide choice of providers and formats is as such desirable as it would respond to different preferences. A wide network of public and private childcare facilities would be flexible in offering solutions. Also it allows for bundling resources, in terms of public and private investments. To have a functioning network of good quality in place and to increase trust of parents, alternative childcare provision should be formalised. Before making major improvements for the formalisation, the following is recommended:

- Develop a new regulation containing a set of minimum standards for health and safety and for staff to children ratios as well as a larger set non-binding guidelines and recommendations for alternative childcare institutions and public creches for 0-2 year old children (or groups for this age within kindergartens). Regulation need to strike a balance between feasibility, affordable access (which is linked to costs) and protection of children. It is advisable that regulations are formulated in a way to allow for some flexibility for implementation.
- Review the existing regulations on minimum standards of hygiene and health and food safety for early education and childcare facilities for 2-7 years children:
    - Adjust outdated technical standards.

  - Separate requirements in binding minimum standards in a way that their implementation is feasible in the Moldavan context and in guiding (not mandatory) documents.
  - Mandatory minimum standards should be formulated in a way that they offer a maximum of flexibility for implementation having quality and sanitary standards in mind. It is also advised to conduct feasibility of minimum standards and to prioritise.
- Establish requirements for formal diploma or for the completion of training for caregivers for getting licensed (requirements should be flexible enough to be feasible).
- Establish a guideline for children-staff ratios. Alternative childcare provision could get transparent ratings on this (independent of the fact if they get licensing).
- Conduct a feasibility study on the quality assessment criteria for getting licensed. Elaborate an action plan to improve minimum standards over time through financial support and guidance.
- Increase incentives for childcare facilities to become formalised (e.g. co-financing).
- Conduct awareness raising among institutions and parents on issues regarding quality of childcare and licensing (after having reviewed the licensing procedure, see above).
- Allow for a registration of institutionalised childcare provision (licensed and not licensed) and of private agencies for home-based care and establish a database.
- Establish an Open Data place with public childcare facilities, licensed childcare facilities, unlicensed childcare facilities. Information should be available online for these different forms of childcare (one number of children enrolled, children to staff ratio, pedagogical concept, opening hours, fees, status, any other useful information). Information would need to be updated regularly.

Access to affordable childcare

Explore the feasibility to introduce different support options for offering affordable early childhood education and care in Moldova for different income groups and needs. Options to be discussed and assessed include for example:

- Placing children (of the age of 0-2, and possibly older) in public institutionalised early childhood education at no fees. For expanding the offer for accessible childcare options for parents from vulnerable groups it is advisable to foresee enough places for this group at no fee in public creches that would be newly created. This would allow for a higher degree of mixing children from different socio-economic background and help to avoid social segregation starting from early ages. It could also be considered to reserve some places for free, at least in some institutions, for integrating children with disabilities in the groups (note that these children need more care and therefore a lower children-t-staff ratio).
- Establishing a system of differentiated fees in public and private licensed institutions according to the taxable income level (as implemented in different EU countries. For example, the Belgian model has already been identified as a good example).

- Subsidised to private provision of early childhood education and care facilities in rural areas and deprived urban areas.
- Voucher system for licenced childcare facilities and formalised babysitters.

Link access to childcare to other measures to promote family friendly policies, employment of women

The benefits of early childhood education and care will be higher when this leads to increased employment rates of women and thus to more economic dynamism. It is therefore recommended to undertake action to promote the employment of mothers with young children. Such a strategy would include:

- Early education and childcare options should be offered to mothers who are already employed and need childcare to maintain their employment (wage employment, self-employment), to unemployed women looking for an employment so that they can be available for a job offer, for mothers with young children to pursue (full-time) education and training.
- Inter-institutional cooperation between local social and employment services are a useful path to overcome employment barriers for women. For example, prioritisation of waiting lists could follow certain criteria (to be agreed by the relevant stakeholders), for example single mothers who actively look for a job or want to maintain their employment after the birth of their child; registered women at the employment agency who need childcare to be able to accept a training offer; young mothers enrolling or being enrolled at secondary schools, in a VET programme or pursuing university studies. In rural areas, also female self-employed and helping family members could be prioritised.
- Likewise, women with children who are enrolled in institutional public or private childcare and who are unemployed, should be followed-up with intensified activities around counselling, referral to active labour market programmes and placed into jobs. Focus on bringing unemployed women with children in childcare into employment or education and training. In rural areas women, support by other key stakeholders may be relevant, such as promotion of entrepreneurship and self-employed with the objective to promote economic dynamism in rural areas.
- Awareness raising activities should be run to overcome bad images of working mothers with young children.

Improve monitoring

To increase transparency of institutionalised early education childcare provision and to follow up progress in the implementation of the objective to increase enrolment of young children it is recommended to:

- Improve collection of reliable data on the enrolment of children in early childhood education and care:
  - Promote the collection of data in the early education and childcare institutions (number of children enrolled on a given date, by part-time / full-time, by age

groups – showing enrolment of 0-2 years old, and number of staff employed, by distinguishing between management, educators / caregivers and associate educators / caregivers and support staff (kitchen, cleaning, etc).

  - Use data of registered children in the Local Public Administration to establish indicators about surplus demand and waiting lists.

- Build up an information database on the "alternative childcare providers", by using registry data (for accredited / certified institutions) as well as survey data, or data provided by studies for taking stock of offers, analysis of offers provided through the internet etc.
- Prepare progress reports for the enrolment rate of children aged 0-2 years in institutional public and private ("alternative care"). Carry out surveys on the participation of 0-2 years old in other childcare formats (babysitter, childminders, etc).
- Conduct research for assessing the quality of care. Indicators (to be determined by the key stakeholders) could be for example: children-teacher ratio; food security; other health and hygiene standards; existence and implementation of an educational concept; space available per child; opening hours; handling complaints; affordability of childcare provision; targeting of support to childcare.
- Provide data for the Key Performance Indicators, so that they can be followed-up regularly (e.g. yearly).
- Conduct research on remaining barriers for the employment of women with small children and reaching desired fertility, collect good practice examples at the local levels on cooperation between social, employment and economic development services.

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APPENDIX A
MANUAL FOR THE COSTING TOOL

A.1 Introduction

The costing tool allows the user to calculate the total cost of the Early Childhood Education implementation programme. It offers results calculated at different levels of disaggregation such as urban/rural or infrastructure/maintenance and pedagogical staff.

In addition, thanks to the model structure, other variables of interest are also estimated while obtaining the total cost of the programme. For instance: the number of staff needed, infrastructure, or the number of children enrolled.

A.2 Structure of the tool

The following table shows the variables used in the model, inputs and outputs, whether these are estimations or statistics, and the level of disaggregation:

Inputs/Outputs

Table A.1: List of the variables used in the tool

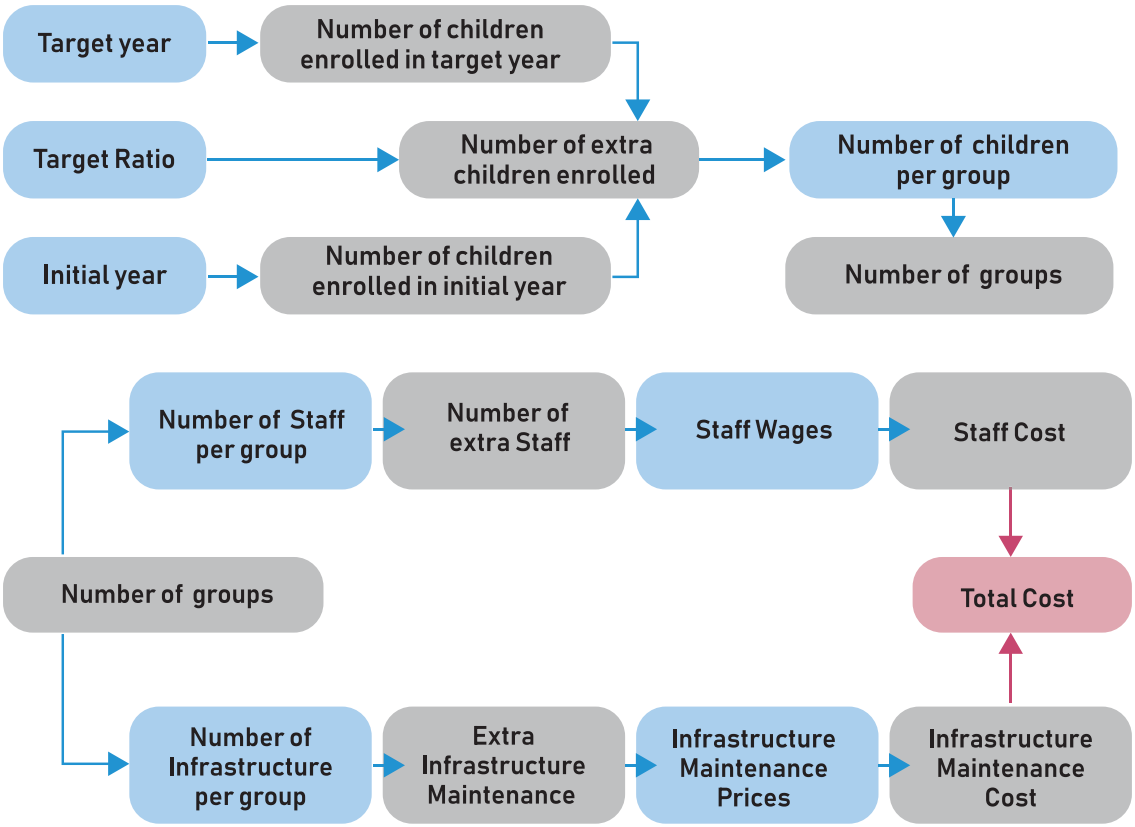
Variable	Input/ Output	Statistics/ Estimation	Level of Disaggregation
Target Ratio of Children Enrolled	Input	-	Urban/Rural, Age Range
Initial Year	Input	-	-
Target Year	Input	-	-
Number of Staff per Group	Input	Statistics	Urban/Rural, Age Range
Number of Children per Group	Input	Statistics	Urban/Rural, Age Range
Pedagogical Staff Wages	Input	Statistics	Urban/Rural
Building Cost	Input	Statistics	Urban/Rural
Renovation/Extension Cost	Input	Statistics	Urban/Rural
Maintenance Cost	Input	Statistics	Urban/Rural
Number of Years of the Programme	Output	-	Urban/Rural, Age Range
Number of Children in Initial Year	Output	Statistics	Urban/Rural, Age Range

Number of Children Enrolled in Initial Year	Output	Estimation	Urban/Rural, Age Range
Number of Children in Target Year	Output	Estimation	Urban/Rural, Age Range
Number of Children Enrolled in Target Year	Output	Estimation	Urban/Rural, Age Range
Extra Number of Children Enrolled compared to Initial Year	Output	Estimation	Urban/Rural, Age Range
Number of Groups Needed	Output	Estimation	Urban/Rural, Age Range
Number of Pedagogical Staff	Output	Estimation	Urban/Rural, Age Range. Category.

Graphical explanation

In this section a graphical explanation is shown in the figure below. In addition, further explanation follows to provide a more accurate description of the model.

Figure A.1: Model description



Finally, the Total Cost variable is coloured in dark red.

The blue cells in the figure indicate the condition of input of the variable, those values that you can change in the tool.

The grey cells indicate output variables which are calculated based on the inputs previously introduced. A similar structure applies in the excel sheet:

	Cell that you need to insert your assumptions. Modify the numbers as needed.
XX	Cell that you should not change since it includes automatic calculations based on the assumptions you added in the input cells.
	Cell that store numbers based on official statistics. You should update these cells with the latest data.
XX	Cells that store the results of the model. Do not change as they will automatically updated based on the changes in assumption.

The model works as follows:

Introduction of the target

Firstly, in the target sheet you need to introduce the Target Ratio, Initial Year and Target Year of the programme. These are disaggregated at the urban/rural levels and age range. With this information the model gives you the Number of Years of the Programme, Number of Children in Initial Year, Number of Children Enrolled in Initial Year, Number of Children in Target Year, Number of Children Enrolled in Target Year, and the Extra Number of Children Enrolled compared to Initial Year.

> The Number of Children Enrolled in Target Year is calculated using the Target Ratio introduced and the Number of Children in the Target Year, the latter is obtained using UN Population projections for the Republic of Moldova. We assume that the growth rate of the population is the same both for urban and rural areas. The growth rates are applied by age ranges.

Table A.2: Introduction of the target excel sheet

	Children up to 2 years old (0,1) in Chisinau.	**Children 2 years old) in Chisinau.**	**Children up to 2 years old (0,1) in rest of the country an**	**Children 2-3 (2 years old) in rest of the country areas.**
Target Ratio, Goal in %.	30	60	30	60
Initial Year	2023	2023	2023	2023
Target Year	2026	2026	2026	2026
Number of Years Programme	3	3	3	3
Number of Children in Initial Year	15,845	8,026	46,305	22,257

Number of Children Enrolled in Initial Year	3	3,592	510	9,532
Number of Children in Target Year	14,452	8,171	42,235	22,659
Number of Children Enrolled in Target Year	4,336	4,903	12,671	13,596
Extra Number of children compared to Initial Year	4,333	1,311	12,161	4,064

Nr of Children & staff per group

In the groups &pedagogicalstaff sheet you can introduce Number of Children per group and the Number of Staff per Group disaggregated both by urban/rural and age range. With these data the tool obtains the Number of Groups needed for these disaggregation levels.

Table A.3: Nr of children per group

	Number of children per group
Children 0,1,2 years old (included) in Chisinau	25
Children 0,1,2 years old (included) in rest of the country	25

Table A.4: Nr of staff per group

Staff composition of 1 Group by Chisinau, rest of the country and age range	Number of staff per group
Children 0,1,2 years old (included) in Chisinau	
Managers	0.21
Educators	3.00
Other	0.17
Children 0,1,2 years old (included) in rest of the country	
Managers	0.21
Educators	3.00
Other	0.17

Pedagogical staff

In the staff&cost_pedagogical you can see the calculation for the number of staff, together with the cost disaggregated at the urban/rural for the age range of 0, 1, 2 years old. This is based on the Number of Groups calculated just before and the Number of Staff per Group required. The cost relates this number of staff required to the wages of the pedagogical staff. You can see these wages in the wages_pedagogical_input sheet where you can change the Wages by Level of Seniority. The wages used are the weighted average by level of seniority wage and share at the urban/rural level.

Table A.5: Nr of pedagogical staff required and cost

Chisinau 0.1.2	**Target year**	**2026**	Rest of the country 0.1.2	**Target year**	**2026**
	Managers	48.16		Managers	138.46
	Educators	677.23		Educators	1,946.92
	Other	39.13		Other	112.50
	Total Staff	764.53		Total Staff	2,197.88
	Cost	83,298,294.46		Cost	240,336,423.25

Infrastructure

In the infrastructure sheet you can introduce the building and the renovation/ extension cost. In addition you can introduce the maintenance cost per child. The tool will then calculate the different costs based on the Number of Groups previously obtained and the Infrastructure per Group needed (obtained from Statistics).

Table A.6: Infrastructure cost

	Number of groups	**Building cost (MDL)**	**Number of years Programme**	**Years for Construction/ renovation/ extension**
0,1,2 in Chisinau	226	677,228,119,95	3	1
0,1,2 in rest of the country	649	648,973,024.77	3	1

Area	**Infrastructure (building) cost per group**
Chisinau	MDL 3,000,000.00
Rest of the country	MDL 1,000,000.00

Total cost

Finally, the total cost sheet puts together the pedagogical staff cost and the infrastructure cost. In this sheet you can check the total cost of the program by year, and also check how much it would cost depending on the length of the programme.

Table A.7: Total cost

Costs (MDL) of the Programme by area, year and category				
Chisinau	**2023**	**2024**	**2025**	**2026**
Infrastructure	677,228,119.95	-	-	-
Maintenance		22,071,624.91	22,071,624.91	22,071,624.91
Pedagogical staff		27,766,083.15	27,766,083.15	27,766,083.15
Chisinau total cost	677,228,119.95	49,837,708.06	49,837,708.06	49,837,708.06
Rest of the country	**2023**	**2024**	**2025**	**2026**
Infrastructure	648,973,024.77	-	-	-
Maintenance		63,163,044.32	63,163,044.32	63,163,044.32
Pedagogical staff		80,112,141.08	80,112,141.08	80,112,141.08
Rest of the country total cost	648,973,024.77	143,275,185.41	143,275,185.41	143,275,185.41
Whole country				
Total cost in the whole country by year in MDL	1,326,201,144.72	193,113,893,47	193,113,893,47	193,113,893,47
in EUR	64,983,856.09	9,462,531.78	9,462,531.78	9,462,531.78

Total cost of the programme (yearly cost agregated)	
Total cost (MDL) of the programme	1,905,539,825.13
Total cost (EUR) of the programme	93,371,451.43

A.3 Data sources used

Table A.8: List of data sources used in the calculation

Data Source	Description	Link	Date of download
UN Data portal	Total population (both sexes combined) by single age. De facto population as of 1 July of the year indicated classified by single age (0, 1, 2, ..., 99, 100+). Data are presented in thousands.	World Population Prospects - Population Division - United Nations	16/12/2022
Statistica Moldovei, National Bureau of Statistics	Usual resident population by ages, rural/urban areas and sex, as of January 1, 2014-2022	Usual resident population,as of January 1 by Years, Ages, Areas and Sex. PxWeb (statistica.md)	16/12/2022
Information from Meetings	Wage for STAFF		16/12/2022
Statistica Moldovei, National Bureau of Statistics	Pedagogical staff in early education institutions by area, 2013-2021	Pedagogical staff in early education institutions by Medii, Indicatori and Years. PxWeb (statistica.md)	16/12/2022
Children in early education institutions by age and area, 2003-2021	Number of children enrolled in early education by age across urban, rural.	Children in early education institutions by Area, Age and Years. PxWeb (statistica.md)	26/01/2023
2 Educatia timpurie. Statistical Report 2021/2022	Pedagogical staff in early education institutions by seniority and area	..\Input\Educatia_ editia_2022\2 Educatia timpurie.xlsx	26/01/2023