

SCENARIOS FOR EARLY CHILDHOOD DEVELOPMENT IN ARMENIA

**FINANCIAL AND LEGAL ANALYSIS OF NATIONAL
PRESCHOOL EDUCATION PROGRAMMES, POLICIES
AND STRATEGIES IN THE REPUBLIC OF ARMENIA**

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The CD-ROM contains three Excel files with calculations for three ECD scenarios proposed in the report. These calculations are constructed in such a way that all “inputs” can be altered by the user.

The Excel files were derived from a model that was initially made for estimating the costs of expanding ECD in a number of countries (van Ravens and Aggio, 2008). It has been translated into one single country (Armenia) and it now distinguishes the eleven marzes. It should also be noted that the population data for the marzes can be easily adapted. With a bit more effort, the model can be translated to a single marz, distinguishing its respective communities.

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The findings, conclusions and interpretations expressed in this report are those of the author, and do not necessarily reflect the policies and views of UNICEF.

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CONTENTS

Preface	page 4	
Acknowledgements	page 5	
Acronyms	page 7	
List of Tables	page 8	
List of Figures	page 8	
Executive Summary	page 9	
Chapter 1	Introduction, terminology, methodology	page 10
Chapter 2	The case for ECD investment in Armenia	page 15
Chapter 3	Governance, legislation and rights	page 24
Chapter 4	Contextual and financial analysis	page 33
Chapter 5	Scenarios	page 48
Chapter 6	Conclusions and recommendations	page 61
References	page 62	

Preface

Early Childhood Development services are both a right of the child and a profitable investment in the human resources and the social capital of societies. This is well understood by policy makers, experts and the general public in Armenia. The country has a rich tradition in the field of Early Childhood Development, and there is a widely shared determination to raise, and eventually universalize, enrolment. “The kindergarten represents a core asset of this country”, as one of the people interviewed for this study put it.

After the sharp decline of pre-school enrolment rate in early 90’s, the first signs of recovery have started to appear in the last years. Deep respect must be paid to field workers, who often brought personal belongings to pre-schools to keep it operational. The commitment and drive for results demonstrated by pre-school education specialists in their bid to reform the system is outstanding and highly appreciated. Policy makers, too, are currently looking for innovative ways to accelerate the recovery of enrolment.

It is at this stage that UNICEF and the World Bank, in addition to providing continued operational and financial support, wish to assist the Government of Armenia in charting a roadmap towards a renewed, effective, equitable, and financially sustainable system of Early Childhood Development services. Based on financial, legal and contextual analysis, this study develops a set of policy options clustered into a number of scenarios. These scenarios should not be seen as policy prescriptions but as feasible and affordable development perspectives. They are meant as bases for a policy dialogue rather than as readily adoptable plans.

I believe that this study commissioned by UNICEF and developed with inputs from the World Bank specialists will spur the ongoing preschool education initiatives in Armenia and contribute to the fulfillment of every child’s right to receive quality early childhood education. This report reflects UNICEF’s and other partners’ commitment to support the Government of Armenia in the area of Early Childhood Development.

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Acronyms

ADM	Armenian Dram
CEE/CIS	Central and Eastern Europe and Commonwealth of Independent States
CGECCD	Consultative Group on Early Childhood Care and Development
ECCE	Early Childhood Care and Education
ECD	Early Childhood Development
EFA	Education for All
GDP	Gross Domestic Product
GNP	Gross National Product
MoES	Ministry of Education and Science
MoH	Ministry of Health
NGO	Non-governmental Organization
OECD	Organization for Economic Development and Cooperation
UNDP	United Nations Development Programme
UNESCO	United Nations Education and Science Organization
UNICEF	United Nations Children's Fund

List of tables

Table 1: Number of kindergartens and number of enrolled children in Armenia, 1990-2006	page 11
Table 2: Numbers of children that drop out annually from elementary or primary school, middle school, and high school, 2002-2005	page 19
Table 3: Simulation of drop out rate for 7-13 year olds	page 21
Table 4: Division of Responsibilities for Education, Social and Health Services	page 25
Table 5: Unit costs for ECD expressed as percentage of GNP, in Armenia and selected other countries and areas, 2004-2006	page 40
Table 6: Annual costs under scenario 1 “Restoring the System”	page 49
Table 7: Annual costs under scenario 2: “Academic Performance”	page 52
Table 8: Annual costs under scenario 3: “Kindergarten as a Social Center”	page 56

List of figures

Figure 1: Stillbirth rate and perinatal mortality rates for 1980-2006	page 18
Figure 2: Trends in Nutritional Status of Children under Five	page 19
Figure 3: Population Pyramids for Armenia, 1990, 2005 and 2020	page 34
Figure 4: Estimated number of children per age cohort in Armenia, 2008-2022	page 36
Figure 5: Use of space in traditional full day kindergarten versus half-day	page 41

Executive Summary

Armenia has a rich tradition in Early Childhood Development. The full day-care programme that the traditional kindergarten offers is based on high standards in terms of human and other resources. But due to tight financial constraints, on both the parts of the government and citizens, only 20% of children in Armenia have access to this core service. Yet less than the present amount of money that the Armenian tax payer invests in early childhood would be sufficient to cover the recurrent costs of providing a sober and focused programme to prepare all five year olds for entry into primary school. Twice that amount of money – about US\$ 2.5 million - would be enough to provide such a programme to all four and five year olds, as well as holistic parenting education during the first years of children’s lives.

Such a diversification of early childhood services would not mean the end of the Armenian kindergarten as we know it. But it does require a redefinition of what its core public tasks are and what services are essentially commercial. The key proposition of this report is that kindergartens, or Early Childhood Development Centers, focus on supporting parents during the critical early years of childhood, and on preparing four and five year olds for school. If parents want their children to stay all day, receive meals, and sleep during daytime, then it seems not unfair to ask a more substantial financial contribution than is presently the case.

As said, the recurrent costs of performing the core public tasks are in the order of magnitude of US\$ 2.5 million per year. This is exclusive of the capital investment that is needed to equip classrooms and premises for parenting education. With the assistance of the World Bank and other donors, communities have already made a strong start in rebuilding this critical infrastructure. In the most farfetched of the four “scenarios” that this report proposes, the recurrent costs may rise to some US\$ 3 million, as “Networks for Early Childhood Development” reach out for children and families in the most disadvantaged and remote areas. Synergy with a home visiting programme of the Ministry of Health may mitigate these extra costs.

Three developments can create the financial scope for covering the US\$ 2.5 million within a number of years. First, there is room for raising the 3.4% of GDP that Armenia invests in education. At 3.8%, for instance, it would free up ten times the amount of money needed for the plan. Second, Armenia has seen double digit economic growth since 2002. Unless the credit crisis prevents the continuation of this trend for many years, growth alone will create a similar financial margin, even if investment in education as a percentage of GDP does not grow. And third, the demographic development, bad as it is

in many other respects, provides a historically unique opportunity to free up substantial resources to invest in early childhood.

The case for making the investment is strong in Armenia. Worrisome trends in school wastage and perinatal mortality point directly at falling living standards and require urgent action. Legislation must also be addressed. While the 2005 Law on Preschool Education is a fantastic step forward, it remains a serious problem that funding early childhood services is a responsibility of communities that in many cases do not have the means to invest.

I. Introduction, terminology, methodology

Introduction

In Armenia, close to 80 percent of children do not attend any form of structured education and care before entry into primary school. High fees, lack of learning materials, poor learning environments and the bad physical conditions of facilities are among the reasons cited by parents for non attendance. Since many mothers no longer have jobs, many families do not feel the need to bring their children to one of the kindergartens that are still operational.

From Table 1 one can see at a glance how the number of kindergartens and the numbers of enrolled children has decreased dramatically since 1990, a year before Armenia's independence. An economic crisis, exacerbated by armed conflict, strongly affected communities' capacities to keep kindergartens functioning during those years. Where this succeeded, it was mainly due to the perseverance of directors and staff, who often made their personal resources available for children.

Table 1: Number of kindergartens and number of enrolled children in Armenia, 1990-2006

Year	Number of kindergartens	Number of enrolled children
1990	1192	113303
1992	1070	91558
1994	1058	81594
1996	1037	72806
1997	943	67200
1998	856	56600
1999	844	52900
2000	769	46600
2001	712	44600
2002	681	45400
2003	682	46141
2004	637	45470
2005	623	47791
2006	623	47308

Source: copied from: Republic of Armenia, 2008. Strategic Programme for 2008-2015 Reforms in Pre-school Education. Original source: National Statistical Service

As a result of the Law on Local Self-Governance of 1996, Early Childhood Development (ECD) became the responsibility of communities, funded from local budgets and fees paid by parents. However, local self-governance bodies do not seem in all cases equipped - in managerial, professional, and financial terms – to ensure the operation of kindergartens. Indeed, as can be seen from Table 1, the decrease of the capacity of kindergartens has not stopped in or soon after 1996. Only the more recent years have brought stabilization, and some degree of recovery.

The Government of Armenia has made various legislative efforts to revitalize forms of ECD, initially with a focus on kindergartens, which traditionally have been the key modality for ECD in Armenia. Thus, the Government has adopted the following policy documents regulating kindergarten:

- the Armenian Law on Education (1999),
- the Programme for Preschool Education Development (2000),
- the 2001-2005 Programme for Education Development,
- the Law on Preschool Education (2005),
- the Strategic Programme for 2008-2015, Reforms in Preschool Education,
- the Pilot Project for the Implementation of the Early Childhood Development and Preschool Education Strategy,

The Law on Preschool Education spurred interest in alternative models for

ECD that better suit the needs and circumstances of various groups and are more cost-effective and accessible. UNICEF, together with the Ministry of Education and local communities, has started small scale pilot projects to test a number of these models. This is continued under the 2008-2015 General Education Reform Programme; it is highlighted in the Poverty Reduction Strategy; and it is prominent in the Strategic Programme for 2008-2015 Reforms in Preschool Education as well as the implementation document for the pilot projects that follow from the 2008-2015 strategy and were financially supported by the Adaptable Programme Loan 1 from the World Bank as part of the Education Quality and Relevance Project. Alongside this development, important work has been done on preschool education standards, in close collaboration with the World Bank and UNICEF.

Finally, it was decided in September 2008 that a substantial number of kindergartens would be prepared and equipped with the financial assistance of the World Bank in the framework of the second phase of the Education Quality and Relevance Project (EQRP) to some of the poorest regions with high supply constraints. With this initiative, the concern is partly with the upgrading of existing kindergartens, and partly with the creation of new facilities within existing schools buildings. Priority is given to the ongoing pilots, and with hopeful signs of recovery in some regions and communities, ECD in Armenia has started the climb back up.

It is precisely at this point in time that UNICEF and the World Bank wish to support the Government and other ECD stakeholders in Armenia in charting a course for the future. This is the core objective of this report. It is forward looking but not prescriptive. Based on an assessment of the possible benefits of an enhanced ECD policy in Armenia (chapter 2), a reflection on governance, legislation and rights (chapter 3), and a contextual and financial analysis of ECD provision in Armenia (chapter 4), this report presents a number of scenarios, or general directions, in which ECD in Armenia could develop (chapter 5). These scenarios are not mutually exclusive; they can be combined whereas Marzes and/or communities can, to some extent, opt for different scenarios. A one-fits-all approach belongs to the past. The scenarios are quantified both in terms of enrolment and in terms of costs, which allows assessment and comparison of the cost implications of various ECD modalities at macro-level. A simple simulation tool in a spreadsheet file is made available for three of the scenarios so that the reader can alter the parameters (e.g. coverage, duration, hours per day/week/year, class size, teacher salary) of the scenarios in order to observe how variations in the parameters impact on overall costs. Chapter 6, finally, draws conclusions and makes recommendations.

Terminology

The terminology used in this report differs slightly from the current terminology in Armenia for the following reason; in the present Armenian context, education in the age range from zero to six (the latter age is nowadays the entry age for primary school) is rightly referred to as “preschool education” age. This echoes the fact that preschool education in Armenia is traditionally seen as a predominantly educational affair, rather than a health affair, a child protection affair, or a combination of the three. Furthermore, institutions that serve children in this age range have always been called “kindergarten”, whether they are “nurseries” for the youngest, “centers” for the senior group, or both. With the introduction of preschool education within schools, a new term was introduced: preschool classes.

This terminology, adequate as it is to describe the existing situation, may create a tension with the scope and the forward looking approach of this report. When charting a course for the future, one does not want to exclude options from the start by the mere terminology that one uses. Therefore, the term “preschool education” will not often be used in this report, while “preschool age” will be defined one level of abstraction higher. We shall use the more generic term “early childhood”. Strictly speaking, early childhood is defined in the Convention of the Right of the Child as 0-8, not just 0-6 (while some include pregnancy in it as well). The two years of overlap between early childhood and primary education (6-8) are seen as a critical period in which not only the child must be school-ready, but schools must be “child-ready” as well. A good argumentation for this was provided by the Consultative Group on Early Childhood Care and Development (2008) in its publication “The Four Cornerstones”, “To secure a strong foundation for young children”. However, the scope of this report is really the 0-6 age range; the first years of primary education will not be addressed.

Following this logic, all aspects of the development of the child during the early childhood years (whether cognitive, socio-emotional or sensory-motor) will be referred to as “early childhood development”, abbreviated to “ECD”. All services provided to children and/or their parents will be called ECD services, regardless the setting in which they are provided. These settings can be:

- A preschool class within a school (for five year olds, perhaps later also for four year olds),
- A kindergarten, either comprehensive - for all ages – or for specific age groups,
- An ECD-center providing not only learning activities but also services related to health and child protection (holistic),
- Group-wise “parenting education”, possibly coupled with a kindergarten or ECD center,
- Individual parent support, provided either within a center or in a home (“home visiting”),

- Integrated child-parent programmes,
- “Home-based provision” of play, care and learning activities, e.g. in small and remote communities that are too small for one full size ECD group.

In a sense, this terminology widens the scope of this study, bringing more cost-effective ECD modalities into the picture. This will be echoed in the scenarios in chapter 5 of this report.

Methodology

This report was developed in the following steps:

- Desk research of legislative and policy documents on ECD in Armenia as well as statistical and socio-economic background reports on Armenia, supplemented by international publications, including publications on ECD in the Central and Eastern Europe / Commonwealth of Independent States (CEE/CIS) region, as well as on Kazakhstan, Kyrgyzstan and Moldova.
- A series of interviews and consultations - partly by UNICEF and World Bank jointly, partly by UNICEF alone - with key stakeholders in ECD: within the Government and within national and international Non-Governmental Organizations (NGOs). This was supplemented with on-site visits of kindergartens and talks with local authorities and directors and staff of kindergartens. These visits provided very valuable insights, even if they could not form a basis for generalizations. An overview of all persons and organizations who have contributed is provided in the acknowledgements, at the beginning of this report. The desk research, the interviews and the visits informed especially chapters 2, 3 and 4.
- Building on the preceding work in this report, chapter 5 on scenarios was inspired by a project of the Organization for Economic Cooperation and Development (OECD) called “Schooling for Tomorrow” (www.oecd.org). This project provides the tools for a systematic approach to identifying relevant trends for education and developing future scenarios that can inform policy making today. Although this OECD project focuses on basic education, its results can be applied to ECD as well. The quantitative elaboration of the scenarios builds on a model developed by Van Ravens and Aggio (2008) which predicts the costs of expanding ECD in various settings. It contains a limited set of “parameters” that determine unit costs, but can also be altered within the spreadsheet in order to observe the macro-level consequences of varying the parameters. While the original model compares different countries, it has been adapted to the situation in Armenia, comparing different Marzes. It would be possible to adapt it further and distinguish communities within a Marz.

II. The case for ECD investment in Armenia

Our global knowledge base

The evidence of the benefits of ECD for the child, the family, the education system, the society and the economy has accumulated over the years, and is well-known to Armenian policy makers in all of the involved ministries. Nobody needs to be convinced of the need to invest in ECD; a lengthy overview of these benefits in order to make the case for ECD is unnecessary for this report. What is useful, however, is a concise account of latest insights, with a focus on programmatic characteristics that make a difference. Not all ECD services, it appears, are equally effective (Crane and Barg, 2003). After this, we will pay attention to a number of worrisome trends in Armenia that ECD can help to counter.

The most authoritative statements on the importance of ECD and the effectiveness of interventions is, beyond any doubt, found in a series of three articles in the reputable medical journal 'The Lancet' (Grantham-McGregor et al, 2007; Walker, 2007; Engle et al, 2007). Not only are the articles based on a very thorough review of all of the quality research that is available, publication in 'The Lancet' also means that the articles meet the highest standards of scientific rigor. Substantial government investments in ECD are from now on as fiscally sound as large investments in industry, infrastructure, healthcare or any other public good¹.

However, the third of the articles, which focuses on strategies, policies and programmes or interventions, warns that interventions must meet the following characteristics to be effective².

- Learning in groups is important for children of 3-6 (e.g. in kindergartens) but this must be preceded by programmes to support families and caregivers in the earliest years that are critical for brain-development and other fundamental aspects of child development. This is especially the case for socially vulnerable families where the conditions for favourable

¹ Other recent and authoritative publications on ECD are (i) the Education for All Global Monitoring Report (UNESCO, 2006) which tracked progress against EFA Goal One: the expansion of ECCE, especially for vulnerable and disadvantaged children; (ii) "Early Child Development: A Powerful Equalizer" of June 2007 by the World Health Organization (Irwin et al, 2007) which provides an overview of ECD benefits that is perhaps more accessible to non-experts than the articles in The Lancet; and (iii) "The Four Cornerstones" by the Consultative Group on Early Childhood Care and Development (2008) mentioned in the Introduction of this report.

² This tabulation is loosely based on the third Lancet article (see "Panel 4" on page 238 of that article) but also on other sources, including the ones mentioned in the preceding footnote. The tabulation has also been adapted somewhat to the situation in Armenia.

child development are often not fulfilled. While focused preparation for entry in school will certainly make a positive difference for any child, continuous attention throughout early childhood – encompassing also the crucial first three years – should be the ultimate goal. In its more recent publication “The Four Cornerstones”, the Consultative Group on Early Childhood Care and Development (2008) turned this into a concrete policy advice: provide four years of support to young parents (from birth until age 4) followed by two years of programmatic school preparation (at age 4 and age 5)³.

- Indeed, sustained support throughout early childhood for all children may now be more important for Armenia to achieve than maintaining the high intensity (i.e. the high number of hours per day or per week) of the traditional kindergarten curriculum where only a small percentage of all children attend, during just one or two years in most cases. A school preparation programme of just 2 or 3 hours per day can have an important impact on school success (Myers, 2004)⁴. Such a programme has a total instruction time of about 375 hours per year⁵ and that is less than half of what is often provided in full day-care settings in Armenia today. Given the choice, and on the given budget, it would be beneficial to prioritize the enrolment of more children for more years on a short programme, above spending the whole budget on a high cost programme for just a few children⁶.
- $1 + 1 + 1 = 4$. Integrating learning activities with healthcare and nutrition produces much better results than the sum of each of the three. E.g. malnourishment – including a lack of micronutrients – can seriously impede cognitive development. Preventing this backlog by a nutrition component in an ECD programme that also includes learning activities, is vastly more cost-effective than helping the child to catch up later on by means of educational interventions. To realize such synergies would require close cooperation at the community level, which in its turn would be facilitated if vertical policy barriers (between the relevant ministries) are broken down. Practically every country in the world has struggled or still struggles with the question of how to attribute roles and responsibilities to ministries, with some choosing one ministry as the lead agency (e.g.

3 This assumes that primary school starts at age 6, which is now the case in Armenia.

4 Intuitively, one would perhaps expect stronger beneficial impacts on school success from programmes with a higher intensity (i.e. number of hours per day). However, even in primary school, the marginal effect of an extra hour of learning tends to diminish beyond a certain point, as school effectiveness research has shown. This effect is even stronger for younger children, with their shorter span of attention. Indeed, it was found in the 1990s by authors such as Barnett, Yoshikawa and Frede that half day programmes can yield equally good results as full day programmes. Myers (2004), reviewing the evidence, even notes that certain full day programmes of low quality are known to have adverse effects.

5 Two and a half hours per day, multiplied by five (the number of days per week), and finally multiplied by 30 (a possible number of school-weeks per year) makes 375 hours per year.

6 See also an evaluation of ECD in Kyrgyzstan (Maclean, 2007:46-47, referring to Engle et al (2007) and Sammons et al (2007).

social affairs, social protection, education, or health) and others trying to achieve a holistic approach to the child by cooperation between various engaged ministries (UNESCO, 2006:174).

- Permanent monitoring of the effectiveness of the programme by means of output measures (e.g. of the number of programmes of enrolled children, and of programme characteristics) and outcome measures of child development is necessary to adjust the programme as needed. This, and the need for quality teaching and care, requires well prepared staff and frequent training.

If the above and other recommendations are taken into account, the rate of return⁷ to investments in ECD may range from 1.8 to as high as 17.0 (Engle et al, 2007:231). Since such rates of return are often quoted in advocacy statements on ECD, a word of caution is perhaps needed. Rates of returns on ECD are usually calculated by comparing the life course of individuals who have attended a programme while young, with a control group of individuals who did not. A small number of frequently quoted studies in the United States revealed rates of return in the order of 4 to 7, but much of the gains are caused by the fact that individuals who attended the programme have a lesser tendency to criminal behaviour, causing less costs in terms of law cases and detention. Other gains consist of lower spending on healthcare, unemployment allowances, et cetera. In many developing countries, these public services are much less sophisticated and hence less costly, if available at all. This is probably one of the reasons why lower rates of return are generally reported in developing countries: one cannot save much if one does not spend much to begin with. Thus, programmes in Bolivia, Colombia and Egypt saw more modest rates of return between 2.4 and 3.1. However, targeting also makes a difference. The more a programme focuses on disadvantaged groups with a high risk of unemployment, poverty, disease and criminal behaviour, the bigger the gains, with an Egyptian programme reaching a rate of return of 5.8, and an American one of 17.1. But what exactly are the implications for Armenia?

The situation in Armenia

A middle income country with a rich historical tradition, Armenia differs both from the United States and from developing countries. Streets are safe and crime rates are low⁸, which is generally explained by a high degree of social control and social capital⁹. So the question is: in which areas are potential

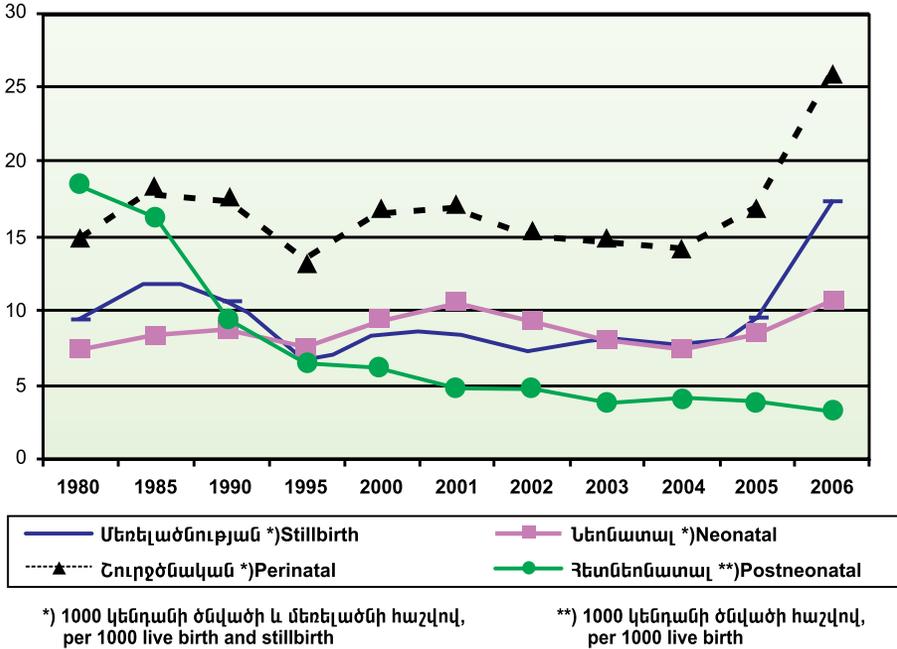
⁷ E.g. a rate of return of 4 means that each ADM invested in a programme will pay itself back fourfold.

⁸ This is an observation by the author – not a scientific finding - but it was confirmed by many Armenians.

⁹ The hypothesis that Armenia is presently in a state of “anomia” (UNDP, 2006:25) seems to be an exaggeration. Social ties may no longer be as strong as they used to be, but are probably stronger than in many high income countries.

gains to be made by expanding ECD? The first answer to this question is given in Figure 1, which shows an alarming increase in stillbirth and perinatal mortality rates.

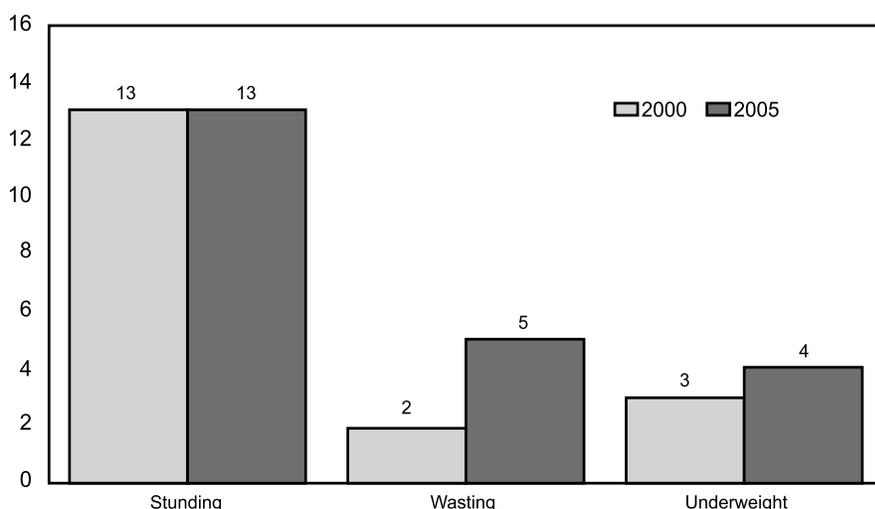
Figure 1. Stillbirth rate and perinatal mortality rates for 1980-2006



Source: copied from the National Statistical Service of the Republic of Armenia, 2007b. Demographic Handbook of Armenia 2007. Yerevan, National Statistical Service
 Note: five year intervals before 2000, one year intervals after 2000

Figure 2 shows that 13% of Armenian children were stunted (too small for their age) in 2000 and that this had not improved by 2005. Lower, but rising numbers, are reported for wasted children (too light for their length) and underweight children.

Figure 2: Trends in Nutritional Status of Children under Five



Source: copied from National Statistical Service of the Republic of Armenia, 2007. Social Snapshot and Poverty in Armenia. Yerevan, National Statistical Service and World Bank.

Ironically, these figures are not exceptional. They are very close to the regional averages for “countries in transition” (UNESCO, 2007:266; UNICEF Regional Office for CEE/CIS, 2007), and much better than the world averages. What is alarming is that figures are worsening in the new millennium, whereas one would hope for further improvement in these years.

Various forms of “school wastage” are on the rise as well. While official statistics on the efficiency of the Armenian education system do not make any alarm bells ring, a different picture emerges from a thorough investigation by Dr. Haiyan Hua, assisted by UNICEF, by the National Institute of Education, and by the National Statistical Service (UNICEF Armenia, 2008). The annual number of children that drop out of school is shown in Table 2.

Table 2: numbers of children that drop out annually from elementary or primary school, middle school, and high school, 2002-2005

Age groups	2002-2003	2003-2004	2004-2005
All ages	1531	4823	7630
7 – 13 year olds only	235	2368	3620

Source: compiled by the author on the basis of data from UNICEF Armenia (2008:16-17)

The upward trend is striking, but in order to assess the scale of the problem, the absolute figures in Table 1 should be transformed into percentages.

According to the UNICEF report, the drop out figures for “all ages” come down to 0.3%, 1.0% and 1.6% for the three school years respectively. This is most probably found by dividing the absolute number of drop outs by the total number of students in the system. This is one good way of assessing drop out rates. Another is to calculate the share of students of any given age cohort that enter the education system but do not make it to the end. This approach often raises the question what “the end” actually is: lower secondary or upper secondary education?

As in many countries, education in Armenia is compulsory until the end of lower secondary education, which in Armenia comprises three grades in elementary school (or four grades in primary school in the new system implemented in 2006) plus five years of middle school. After this, follows three non-compulsory years (two years in the old system) of high school. Since transition to high school is not compulsory, it is debatable whether or not leaving education after completing middle school is a matter of drop out. E.g. in Europe, many students leave education after lower secondary, and one of the benchmarks of the European Union is to halve the number of students who do not complete high school, not to eradicate this phenomenon altogether. It would thus be best for Armenia to monitor the following two indicators: the percentage of children that do not complete compulsory education, and the percentage that do not complete high school. The objective for the first indicator would be a reduction to zero, while the objective for the second could be a more gradual reduction, not necessarily to zero.

In the absence of these indicators, it is possible to estimate the share of early drop outs by simulation. We do this by focusing on the 7 – 13 year olds (see Table 2) who cover grades 1 – 6, while keeping in mind that even the 13 year olds are still two years away from completing the compulsory phase. We further assume that the number of 3620, rounded off to 3600 will stabilize in the years to come – which seems to be an optimistic assumption - and we also assume that 300 of them will drop out in each of the first two grades, 600 in each of the third and the fourth, and 900 in each of the fifth and the sixth¹⁰. Finally we imagine that 36.000 new students entered the Armenian education system in the year 2000. Table 3 tracks the numerical development of this age cohort.

¹⁰ This assumption is based on the fact that drop out rates usually increases with age. Whether or not our assumption is entirely correct makes no difference for the outcome of this simulation; what matters is that 3600 drop out over six grades.

Table 3: Simulation of drop out rate for 7-13 year olds

Year	2000	2001	2002	2003	2004	2005	2006
Grade / age	1 / 7	2 / 8	3 / 9	4 / 10	5 / 11	6 / 12	7 / 13
Drop out	300	300	600	600	900	900	-
Size of cohort	36000	35700	35400	34800	34200	33300	32400
Drop out rate	-	-	-	-	-	-	10%

The simulation shown illustrates how the 36.000 children that entered in the year 2000 lost a total of 3600 classmates throughout the six years, which implies a drop out rate not of 1.6% but of no less than 10%, even by age 13. On the assumption that the annual number of drop outs remains 900 in grades 7 and 8, the drop out rate at the end of compulsory education would be in the order of 15%.

Another alarming development is the high incidence of absenteeism among students. Of all the hours that Armenian students were intended to attend classes, 5.5% was missed (UNICEF Armenia, 2008:38). And while some degree of absenteeism is unavoidable even for dedicated students, 28.2% of Armenian students are excessive or chronic absentees by international standards.

Absenteeism was found to be the second strongest factor impacting on school performance. It was less strong than gender (with girls performing better than boys as in many other countries), but stronger than socio-economic status (proxied by employment status of parents), which is normally considered the single most important predictor of school success. Class size was also less influential than absenteeism. For every three days that a student is absent, his or her marks will be 1.2% to 1.7% lower, depending on the subject, and the 28.2% excessive absentees see their performance go down by 12% to 16% (UNICEF Armenia, 2008:37-39).

The regular, nationally standardized examinations conceal this worrisome phenomenon. The pass rates are so high that the credibility of these examinations is at stake. A possible cause is that examinations are locally graded and that teachers have no interest in maintaining a high level of scrutiny (UNICEF Armenia, 2008:19); allowing weak students simply pass makes teachers' lives easier. When performance really matters – i.e. at higher education entrance exams – students tend to take private tutoring (UNICEF Armenia, 2008:23) and in some cases tutoring is the very reason for being absent (UNICEF Armenia, 2008:46).

Can ECD make a difference?

We have just looked at stillbirth and perinatal mortality (Figure 1), at nutritional status (Figure 2), and at various indicators of school wastage. How are these related to developments in ECD? Is there a causal relation between the closure of kindergartens and the worrisome trends in health and school performance?

If we examine the kindergarten enrolment trend in Table 1 (Chapter 1), we see that this has decreased sharply since 1990, on average by about 10.000 annually. If we assume that the average age of entry in kindergarten was at that time 4 or 5¹¹, then the generations that were born in the mid 1990s were the first who started to miss out on kindergarten. If we further assume that those children who leave education before completing middle school do so at an average age of 13 or 14¹², then we would expect the beginning of an increase in drop out rates by the turn of the century. This is broadly consistent with the trend in Table 2. Although this represents no absolute evidence of a causal relation, there is some likelihood of a link between the two phenomena.

The situation is less clear for the patterns of stillbirth and perinatal mortality in Figure 1. We see a bit of a hockey-stick curve¹³, but the low values around 1995 are puzzling. Why would child mortality rates go down in a time of crisis? A likely explanation is that overall birth rates were particularly low in those years, precisely as a result of the crisis, and that the birth rate among poor people went down more sharply than among the rich, producing the optical illusion of better child survival.

We could conclude that the melt down of ECD-services as of the 1990s may have caused the current increase in school wastage, and that the picture is not clear for the recent developments in terms of mortality and nutritional status. But perhaps we must adopt a broader view. Any crisis has its delayed effects. Both citizens and communities usually have their “reserves” to go on with for some time. These can be financial or material, but also immaterial. The parents of a child that is born in 1980 have lived for many years in a country where there was trust that success at school contributes to success in life and to family income. When their child reaches the age of 15 in 1995, the parents are likely to have encouraged the child to continue education as long as possible, notwithstanding the fact that the world around them had changed. By contrast, parents of a child born in 1995 may have experienced

11 Some will have entered later, some earlier, but back in those days it was much less unusual for a child to be cared for in a nursery during some time of the week than it is now, with so few mothers having work.

12 The typical age for completing middle school is 15.

13 This is a term made famous by Al Gore; it refers to a trend that does not show a lot of movement for a long time, and then suddenly goes up dramatically.

themselves that education is not a guarantee for a job. Leaving school young and trying to generate some income – if necessary abroad - may have been a rational choice for them, given the new circumstances. They may have a different message for their child if it reaches the age of 15 in the year 2010.

Perhaps the wisest conclusion is that whether or not the decrease in ECD enrolment has caused the present problems, these problems can be attacked by increasing enrolment. Jaramillo and Mingat (2006) found that investment in ECD – in school-preparation in particular – pays itself back to a large extent in terms of higher efficiency in education alone¹⁴. Even more impressively, the OECD (2005a) found that a one year increase in the average number of years that children in a certain country follow education, will eventually lead to an increase of GDP by 3 – 6 %, structurally. For Armenia, this extra income would be in the order of a quarter to half of a billion US\$; just the tax revenues that result from this additional income would largely exceed the costs of not one but several years of quality ECD for every child in Armenia, as we shall see in chapter 5.

It is perhaps difficult to envisage how the education of young children can have such an impact on macro-economic outcomes. The knowledge economy is usually associated with computers, high-tech industries and cutting edge research, not with children playing with toys. And indeed, the reflex of many a government is to prioritize vocational and higher education over ECD. However, it is brainpower that makes the difference in the knowledge economy, and it is the period of early childhood that shapes the brain. Indeed, in various publications, Nobel-prize winner James Heckman has demonstrated that the returns on investment in ECD are higher than those later in the educational career, partly because earlier investments have a longer pay-off period (UNESCO, 2006:112), and partly because ECD is a double edged sword: it is a form of education in and of itself, but it is also the seed for academic and employment success (Engle et al, 2007:230). Investment in ECD leads to returns that are “many times the size of the original investment” as Irwin et al (2007) put it.

14 The study found that 87% of the investment returned in the form of higher efficiency. However, this study concerned a sample of Sub-saharan African countries and it can not be concluded that a similar figure can be reached in Armenia where school wastage is not as dramatic as in Africa. If we add up all the other (non-education) benefits of ECD, this is broadly consistent with the overall rates of return of 2 to 3 that we found for developing countries earlier in this chapter.

III. Governance, legislation, rights

Decentralisation

As many other countries have done, both in the western world (OECD, 2001) and in developing regions (UNESCO, 2006:174), Armenia has made ECD the responsibility of more than one ministry. The Ministry of Education and Science (MoES) has the lead when it comes to policy development in ECD, though it presently has little financial means. The Ministry of Health has responsibilities and institutions for healthcare for children in the early years. The Ministry of Labour and Social Protection plays its part in combating poverty and, hence, creating favourable conditions for children to develop. And finally the Ministry of Territorial Affairs is responsible for the allocation of state funds to communities. While it is by no means exceptional for a country to have some coordination issues regarding ECD, these problems are exacerbated in Armenia by an unusual “asymmetry” between the three relevant fields of competence: education, health, and social protection. Table 4 illustrates this.

Table 4: Division of Responsibilities for Education, Social and Health Services.

Functions	Municipalities (Individually or in Partnership)	Central or State Territorial Administration
I. EDUCATION		
1. Pre-school	X	
2. Primary		X
3. Secondary		X
4. Technical		X
5. Higher		X
6. Specialized	X	
II. SOCIAL WELFARE		
1. Nurseries	X	
2. Kindergartens	X	
3. Welfare homes		X
4. Personal services for elderly and handicapped		X
5. Special services (for homeless, families in crisis, etc.)		X
6. Social housing	X	
III. HEALTH SERVICES		
1. Primary health care	X	X
2. Health protection		X
3. Hospitals		X
4. Public health	X	X

Copied from Tumanyan, D. 2001. Local Government in Armenia. Developing new rules in the old environment.

Table 4 shows that the state assumes full responsibility for all stages of education (primary, secondary, vocational, tertiary) with preschool as the single one exception. Likewise, in the area of social protection, the state is responsible for a range of issues such as welfare homes, the elderly, the handicapped, the homeless and families in crisis, but again not for nurseries and kindergartens¹⁵. For health care, however, all responsibilities are with the state, with shared responsibilities for primary healthcare and public health.

So while education and health ministries in many other countries are faced with the challenge to harmonize their policies at state level in such a way that

¹⁵ Social housing is also a matter for communities rather than the State, but this is more understandable given communities responsibilities for urban development and infrastructure.

it leads to holistic approaches and integrated services “on the ground”, the MoES and the Ministry of Health (MoH) in Armenia are extra handicapped by the fact that the power of the MoH reaches all the way down to the community level whereas the power of the MoES does not. While both the MoES and the MoH fully recognize the importance of integration of ECD services and of each other’s role in delivering them, an attempt to achieve this integration failed a few years ago¹⁶. Meanwhile, the MoH runs a scheme for parent support (partly home visiting, partly centre-based; a group-wise approach is being piloted) based on the Care for Development concept of the World Health Organization. It could become the vehicle for an integrated approach if educational elements were added – in fact, group-wise parent support is presently pilot-tested under the aegis of the MoES as well – but the legislative architecture seems to hinder such synergies. Since the asymmetry between the MoES and the MoH is important for our analysis, we will briefly examine the historical background of this situation.

The decentralization of kindergartens was an implication of the Law on Local Self-Government of 22 July 1996. In the years between independence (1991) and the ceasefire with Azerbaijan (1994) the government was not able to pay close attention to legislation, according to Tumanyan (2001), but after the adoption of the new Constitution (1995) further legislation rapidly followed. The decentralization of public services and functions was a key characteristic of new legislation, and the Strategic Programme for 2008-2015 Reforms in Preschool Education of the Republic of Armenia (2008:10) qualified the preschool decentralization of 1996 as “a politically correct decision fully consistent with international trends”; the following motives are given (not literally quoted):

- it enhances participation of communities and parents,
- it makes it possible to attract new financial resources,
- it enhances the flexibility of financial-economic management,
- it reduces delays in decision making and combats bureaucracy.

With the Law on Education of 1999, the MoES focused its attention even further on elementary, middle and high school (i.e. “secondary education” in the Armenian terminology), and with all policy efforts being concentrated in the following years on reforms in secondary, vocational and tertiary education, the Ministry even closed its own Division of Preschool Education (Iltus and Osicka, 2006).

The period between 1999 (Law on Education) and January 2006 when the new Law on Preschool Education came into force, were perhaps the darkest years for ECD in Armenia. But with the Law of Preschool Education – which will be discussed hereunder – the tide has turned. The MoES reassumed

¹⁶ This attempt was undertaken by a task force consisting of the ministries of education, health, labour and social protection, and justice, as well as UNICEF and Step by Step

responsibility for ECD policy, even if the responsibility for funding ECD remained at community level.

The role of the MoES in ECD now implies strategy and policy development, standard setting, curriculum and content development, in-service training, and related activities. The National Institute of Education plays a key role in most of these activities in tight cooperation with various international NGOs, while the MoES itself has reopened its Preschool Division. The picture that Table 4 paints is perhaps no longer adequate: as said, the State is responsible for overall policy, while the funding and the day-to-day operation of ECD institutions is the responsibility of the communities.

However, the reappearance of the MoES in the field of preschool education has not resolved all of the policy inconsistencies that characterize the ECD sector. To understand these inconsistencies we discuss the claim that the decentralization of 1996 was “a politically correct decision fully consistent with international trends” (Strategic Programme for 2008-2015 Reforms in Preschool Education of the Republic of Armenia, 2008:10).

It is absolutely true that decentralization is the main innovation in governance of the last decennia and hence that it is consistent with international trends. But three critical conditions for decentralization have failed to be respected in Armenia as well as other countries in the region (UNICEF Regional Office for CIS/CEE, 2007; MacLean, 2006; MacLean, 2008:6; UNESCO, 2006:175-176; UNESCO, 2005).

- First, the devolution of responsibilities to lower governance levels requires the building of capacities for management, quality assurance and innovation at those lower levels (UNDP, 2006:12; Yerevan Declaration on Decentralization, article 6, 1999). Building these capacities requires time; it cannot be done overnight and this means that decentralization needs to be a gradual process.
- Second, these capacities can only exist and persist at a certain minimum scale. The largest community in Armenia has more than 10.000 inhabitants but the smallest has only 37, while the regulatory conditions are the same for all (Tumanyan, 2008:330). With the current low birth rate, communities with less than about 600 inhabitants aren't really large enough to operate one multi-grade ECD class of 25 children in a financially sustainable manner, and communities with less than about 2000 inhabitants will generally have difficulty maintaining a local ECD sector that is large enough for professional development of staff, interdisciplinary consultation, monitoring of international trends in ECD,

innovation, employment of specialists¹⁷, et cetera. Thus, decentralization all the way down to the level of the community is in many cases too farfetched. Recentralization to the Marz level is not an option either, because the Marzes have 44 communities (Vayots Dzor) or more (up to 119 in Shirak). Since there is no administrative level between the Marz and the communities, small communities should join forces regionally, and their ECD sectors should operate in networks and apply the principle of “shared services”. We will return to the issue of scale as we develop the “scenarios” in chapter 5.

- Third, decentralization of power should go hand in hand with the decentralization of central budgets, not with the termination of those budgets. Critical public services such as those in education, healthcare and social protection have always been financially secured from the public purse both in the CEE/CIS and the rest of Europe, and there is no reason why the decentralization of some of those critical services to lower levels should imply the termination of the state’s financial responsibility (Yerevan Declaration on Decentralization, article 5, 1999). Various modalities exist for disbursing the central resources in such a way that government, clients, providers and stakeholders at the local level retain the freedom they need to organize service provision in a manner that best suits local needs and contexts (e.g. per capita funding or formula funding, vouchers, conditional cash transfers), and it would be advisable to consider these modalities in further ECD policy development in Armenia.

It seems fair to say that the three conditions for decentralization that were discussed above (capacity, scale, funding) were not fulfilled in the case of ECD in Armenia. According to many sources and many of the people interviewed for this report, the lack of central (or centrally secured) funding was the main factor why the meltdown of Armenia’s ECD sector could not be stopped until 2004, and why it is so difficult to recover. (The capacity problem was also mentioned frequently during the interviews and the scale problem less frequently and more implicitly). Communities are simply unable to supply enough money to kindergartens, and not enough parents can afford the fees that would be needed for financially sound operation. A quote from a report on ECD in Kyrgyzstan would also fit the situation in Armenia: “Great enthusiasm for decentralization followed the collapse of the centralized system; however there were neither the finances nor the expertise at local government level to sustain decentralized approaches, nor were there viable markets for fully privatized solutions” (MacLean, 2008:6). Indeed, the decentralization of 1996 appears to have been a hasty decision,

¹⁷ E.g. a speech therapist or bookkeeper can only be afforded by either one large kindergarten or a network of several small ones. This may have been different in the Soviet era, when there was one staff member (teaching and non-teaching) for every four children. But it should be kept in mind that these kindergartens were better equipped than the ones in OECD countries have ever been, apart from exceptionally expensive private institutions. Rebuilding the ECD sector cannot be done by replicating the high standards – or the inefficiencies for that matter - of the past, as we shall see in chapter 5.

and if one looks at Table 4, one does not see a strong rationale why some public services are in the communities' column and others are in the State's column. Healthcare and regular education continued to be secured by the State in 1996, and rightly so because they are critical public services. ECD is the integration of healthcare and education for the most vulnerable age group, and it is not clear why access to it became dependent upon the wealth of communities and parents.

On the assumption that State will not reassume financial responsibility for ECD, what options do communities have to make ends meet?

Options for communities

The communities derive their general budgets from two main sources: the State and their own income. The State, based on the Law on Financial Equalization, disburses annual subsidies to all communities. It is called "equalization" since it aims at reducing disparities between communities, so that all communities will have enough resources to secure essential services. Indeed, the subsidies are not only based on numbers of inhabitants, but also on capital revenues, making sure that poor communities receive more per capita. Quite importantly, these state-to-community subsidies are not earmarked. Communities are free to allocate them to whatever purposes they deem necessary. But given the multitude of responsibilities that communities have, kindergartens compete for funding not only with special education, social housing, primary health care and public health (see Table 4), but also with public services in the areas of culture, leisure and sports, water supply, sewage, heating, environmental care, public sanitation, traffic, transport, urban development and general administration (Tumanyan, 2001:367-368). Although the state-to-community subsidies are small as a share of the overall government budget (in the order of 5%), they are much more important as a share of communities budgets¹⁸.

Communities' own, self-generated income is derived mainly from local duties and taxes and land and property rent. Communities can also sell community property – and indeed many a kindergarten building had been sold until the government forbade this – but obviously this is not a permanent source of income. Remarkably, local duties and taxes are generally under-collected (Government of the Republic of Armenia, 2008:6)¹⁹, and there is an expectation that with the gradual improvement of management capacities at local level, communities will manage to generate more income from local taxation. In fact, a number of communities have done so and were able to strengthen

¹⁸ The exact share is not clear however. Tumanyan (2001:346) writes that in general over 50% of local budget revenues come from the state, but figures on 1997-1999 range from 18.7% to 37.75% (Tumanyan, 2001:348).

¹⁹ Tumanyan also reports under-spending of community budgets, but the figure (49.7%) dates from 1999, while more recent figures have not been found.

funding for ECD. Moreover, the Government widened the possibilities for local tax collection in 2003.

An exceptionally encouraging example has been set by the Avan community in the Yerevan District. It has made great efforts to enhance the transparency and the public's involvement in local politics; it strongly increased the income from local taxes, not by changing regulation but by making the best use of existing regulation²⁰; it creatively found new sources of income (e.g. in the form of roadside advertisement); and it merged its seven kindergartens into one professionally managed legal entity, creating important economies of scale. As a result, it was able to provide access to kindergarten to all children in Avan free of charge. The high quality of the services even attract a substantial number of (fee-paying) children from outside the community, further broadening the economic basis of this network of kindergartens. It must be said that Avan community is benefiting from its favourable location on the outskirts of Yerevan and alongside one of the country's main highways. But by emphasizing this, one would not do justice to what has been achieved in Avan; this deserves to be showcased as an example from which other communities can learn, even in less favourable conditions.

Nevertheless, the difference between the situation in Avan and that in small remote communities in the poorer Marzes does underscore that twelve years after the decentralization, inequalities between communities still persist - even if some communities leaders could do a better job – and that this translates into inequalities between children, at the end of the day.

So what are the chances for change? Interviews with policy makers revealed strong reluctance against a fundamental reconsideration of the State's withdrawal from ECD funding. It seemed nothing less than a taboo, and there is the probability that this has to do with fear of creating a precedent. Local suppliers of public services that are presently in the same position as kindergartens would probably claim central funding as well, once ECD obtains it. Another consideration that was brought forward was that despite access problems, some communities and some parents have now developed a willingness to contribute, and this funding potential was expected to be lost with the restoration of state funding for ECD. This, however, is not necessarily the case; e.g. one could leave the existing financial arrangements at community level as they are but introduce targeted state-subsidies for the poorest or a fee-waiving scheme for this group. Such “conditional cash transfers”²¹ are successful instruments in education and poverty reduction policies all around the world, both in poor and in rich countries. Moreover, the Ministry of Territorial Affairs is considering interesting innovations regarding the state-

20 E.g., many unregistered companies were registered and taxed.

21 People receive a certain amount of money from the state on the condition that a child goes to kindergarten or school.

to-community subsidies, namely (i) changing the criteria for the allocation of these subsidies by favouring poor, small and remote communities more; (ii) earmarking a part of the subsidies for ECD; and (iii) basing this earmarked component on an estimation of what it would cost to run a group of children in a kindergarten²².

Law on Preschool Education

The last issue for this chapter is a reflection on the aforementioned Law on Preschool Education of 2005, and the most important policy document that resulted from it, the Strategic Programme for 2008-2015 Reforms in Preschool Education of the Republic of Armenia. The Law of Preschool Education was a turning point that marked the rise of ECD on the list of priorities of the MoES. And the Law reflects the state of the art in ECD. If one examines it against major international statements such as the Convention on the Rights of the Child, the Millennium Declaration, the Education for All Framework of Action, and A World Fit for Children, then one finds nothing in the Law that would prohibit the fulfilment of the aims of these international statements.

The Law on Preschool Education is crystal clear about children's right to receive preschool education (article 4a, 11.1.a, 23.1). In order to make access to ECD a reality for all, the state will expand its involvement (article 3b) and no longer resist financial targeted support (article 4e). The goals of preschool education are formulated as follows (article 6.1.a-c):

- preserving and improving the child's physical and mental health,
- providing harmonious development and education for preschool children,
- preparing the child for school education.

It can be noted that these goals are no longer dominated by an educational bias. The first actually points directly at health issues, while only the last focuses on preparation for school.

Other recurrent themes are holistic development (article 3a) – throughout the text of the Law, balanced attention is paid to learning, health and protection - and synergy between education within the family and within the institution (5c, 23.2.b, 28.1.a). Furthermore, the Law thinks “out of the box” in that it widens the scope for “pedagogical innovations, alternative programmes (and) pilot activities” (article 11.3) and also for situating ECD in other settings than just kindergarten (article 23.2).

The one and only problem of the Law on Preschool Education is that it does not escape the Law on Local Self-government (article 19.2) and the

²²This estimation would serve as a “working assumption”; communities would not be obliged to allocate the earmarked funds in this particular way. They are free to allocate it differently, as long as it is for ECD.

inconsistencies that it produces. On the one hand, the Law on Preschool Education states explicitly that there be state policy implementation at the community level (article 17.a) and even “state control” (article 19.1), while on the other hand there is nothing in the Law that points in the direction of a state guarantee for sufficient funding. Thus, there continues to be the oddity of a state setting norms and standards, but not giving people at grassroots level a realistic chance of meeting them. During the interviews that were held for this report, people seldom mentioned spontaneously the various sets of state norms for kindergarten (such as those for staffing, inventory, funding, hygiene, et cetera). Whenever interviewers asked about them, the answer was invariable that these norms stem from the Soviet era when much more funding was available, and that they are now obsolete (see also Government of the Republic of Armenia, 2008:11). A striking example is article 30.5 of the Law on Preschool Education which stipulates that educators in kindergartens must receive no less than twice the minimum wage. Although it is obvious that this measure has been taken with the best of intentions (i.e. to attract more young people to the profession and to retain them longer), many kindergartens simply cannot comply with it. There is anecdotic evidence of a kindergarten and even a community that went bankrupt by staying true to this article in the Law. Likewise, article 28.2 demands that parents “provide relevant conditions for receiving preschool education for preschool children”. If this implies that parents must pay the fee whether they have the means or not it would add another inconsistency. In this light, article 26.2 is remarkable as well; it provides for free medical services for those children who are enrolled in kindergarten, though it appears to exclude children who are excluded from kindergarten.

Despite these inconsistencies, it remains a fact that the Law on Preschool Education is a turning point, opening up ECD in Armenia to global trends and good practice. The first major ECD policy document that was issued under the aegis of this Law was the Strategic Programme for 2008-2015 Reforms in Preschool Education of the Republic of Armenia. This strategic programme spurred a development that was set in motion a few years earlier through two policy documents: the Early Childhood Development and Preschool Education Reform Strategy for 2005-2010 and the Pilot Project for the Implementation of the Early Childhood Development and Preschool Education Strategy. This development concerned the search for new ways to provide ECD services to children in Armenia, namely through bold experimentation in innovative pilot projects. A “rapid” but nevertheless thorough evaluation of the first wave of four pilots was carried out in 2006 by Iltus and Osicka (2006). We will not discuss this evaluation here in detail; it is being used as an important information basis throughout this report. Building on this evaluation, the Strategic Programme for 2008-2015 launched a second wave of three pilot models, partly overlapping with the original four. All of the Armenian pilots will serve as a source of inspiration for the scenarios in the last chapter.

Furthermore, the Strategic Programme for 2008-2015 contains encouraging statements about the financing issue. On page 19 it states explicitly that “targeted allocations from the state budget will be made”. It emphasizes the issue of enrolment of children from vulnerable families (page 21), and it launches the target of 90% enrolment of 5 year olds by 2015, once again hinting at the prioritization of families who cannot afford the fees (page 22).

Finally, the Strategic Programme addresses the funding problem directly. The following quote (from page 22) illustrates this: “It is expected that state support to the development programmes of preschool education system will be provided in the form of targeted financial investments, thus facilitating enhanced availability of and enrolment in the system covering a greater number of children from the poorest, and most vulnerable families, and improving the quality of services. Therefore, it is necessary to clarify and define the powers and obligations of the state and the communities in this area by means of adequate mechanisms, as well as to deal with the issue of targeted financing of the system.”

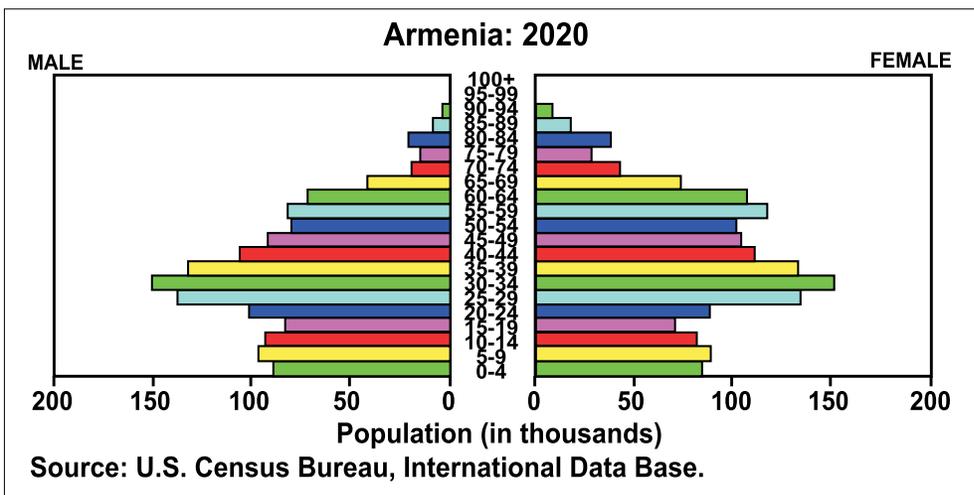
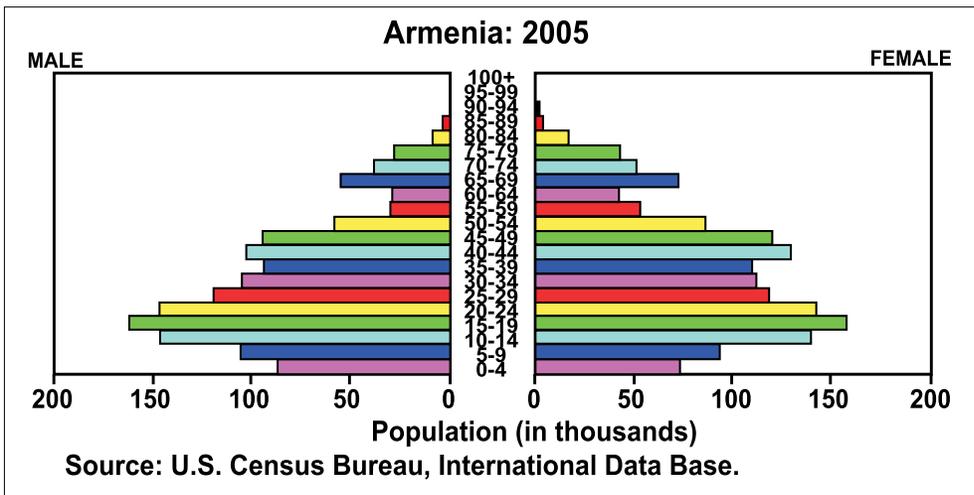
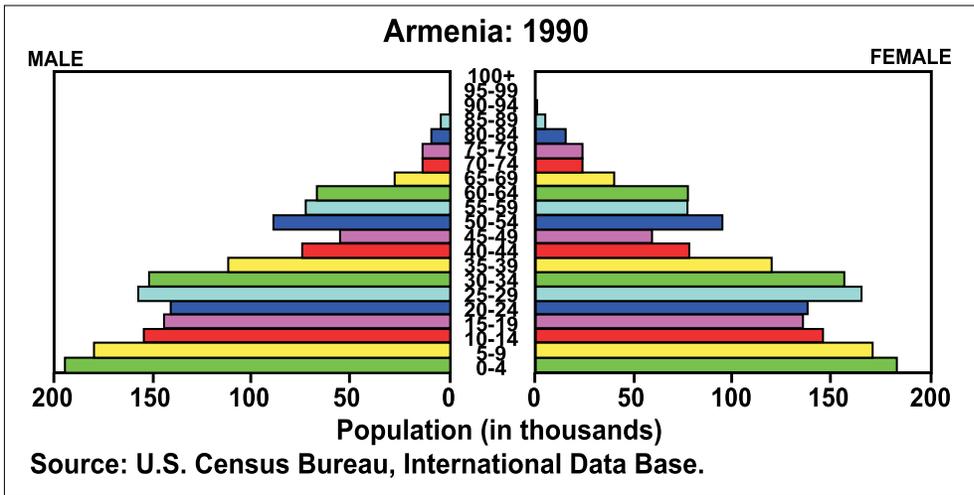
IV. Contextual and financial analysis

This chapter contains a number of analyses, each necessary for the formulation of the scenarios in the final chapter. First, we look at the demographic, economic and financial context for ECD in Armenia in the coming years. Then we zoom in on the costs of ECD and on its respective costs components. These analyses pave the way for the development of the scenarios in the next chapter.

Demographic context

Figure 3 consists of three “population pyramids”. Comments follow on the next page.

Figure 3: Population Pyramids for Armenia, 1990, 2005 and 2020.



Population pyramids are a common graphic representation of the age composition of populations. With females on one side and males on the other, the vertical axis for age is in the middle, ranging from zero at the bottom to 100 at the top. In those countries where every new age cohort is larger than the former one, this graphic representation results in the shape of a pyramid. Generally speaking, this is the case for developing countries where poverty goes hand in hand with a lack of birth control, while richer countries have made the transition to low birth rates and stable or even declining populations. In the latter cases, the pyramid shape has made way for a column or other shape.

Figure 3 shows that Armenia still had a pyramidal population in 1990, although the figure also reflects the dramatic history of the country through the 20th century.

The figure for 2005 reveals a significant drop in the number of new born children, partly due to emigration and partly due to a declining birth-rate. This sharp decline is possibly the result of the historically unique combination of rising poverty within a well-developed society with good conditions for birth control. The figure also suggests that the decline of enrolment in ECD was not only a result of a lack of funding, but partly also a matter of demography. In other words, the percentage of enrolled children did not drop quite as dramatically as their absolute number.

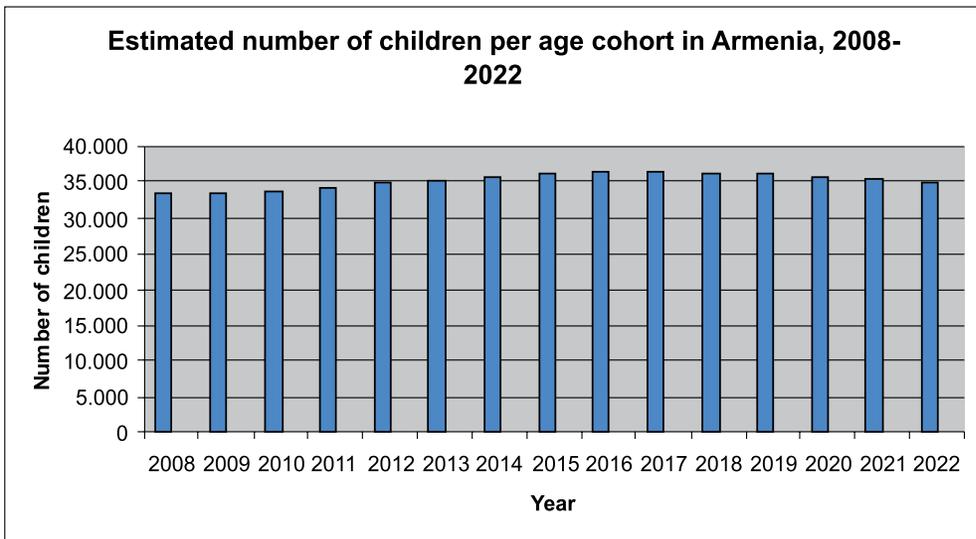
The projected population numbers for 2020 suggest that the birth-rate will not recover. As any forecast, this is debatable. One could argue that if economic hardship caused the decline, economic recovery might cause a rise. However, it is the experience of many OECD countries that a structurally low birth-rate is a sign of the times, independent of the business cycle and rooted in new life-patterns (e.g. more young people study longer, marry later, and opt for less or no children). It may well be the case for Armenia that although the decline of births in the 1990s was initially a socio-economic phenomenon, it was also the trigger for the country to make the transition to the structurally low birth-rate that is common for richer countries.

The first signs are in accordance with this hypothesis. While 2004 was a positive turning point in as far as migration was concerned (emigration has decreased since then, while remigration has picked up), fertility rates hardly changed between 2000 and 2006 (National Statistical Service of the Republic of Armenia, 2007a:13-14). It should also be noted that Figure 3 is retrieved from the US Census website, and that the same dataset predicts an overall population size of 2.943.441 by 2050, which is broadly consistent with the

most optimistic scenario that the United Nations Population Division predicts for Armenia²³.

The demographic development in Armenia is important for ECD for two reasons. First, it determines the numbers of children that the ECD sector will have to serve, and hence overall costs. Figure 4 shows what the pyramid for 2020 already suggests: the size of the age cohorts that are eligible for ECD services will not vary strongly in the coming years. It is likely to stabilize at a level of around 35.000. There is a slight rise up to 2017, followed by a new but slight decline. This is consistent with the falling birth-rate in the 1990s; the children born in those years will be potential parents around 2017, and since they are less numerous than earlier generations, their children will be less numerous as well even if the number of children per family would remain constant.

Figure 4: Estimated number of children per age cohort in Armenia, 2008-2022



Source: compiled by the author based on data retrieved from US website. For each year, the number of 0-4 and 5-9 year olds have been added and divided by ten, in order to eliminate small and irrelevant fluctuations.

For the further calculations in this report, it is proposed to ignore the small fluctuation in figure 4, and to assume (i) that in all of the coming years, 35.000 children will be born in Armenia, and (ii) that, on balance, migration will no longer play a strong role (i.e. that emigration, immigration and remigration will be a zero sum game). Admittedly, this assumption causes inaccuracies,

²³ This optimistic scenario forecasts 3.1 million inhabitants in 2050, which is close to the present size of the population. The middle scenario predicts 2.5 million and the pessimistic scenario 2.0 million. For reference, see UNDP (2006).

but at the same time it strongly simplifies the elaboration of the scenarios by eliminating time as a factor. It should be emphasized that the scenarios are meant for strategic decision making, not for short term planning and budgeting.

The second reason why demography is important for ECD has to do with public finance. Not only is it more affordable to provide services for age cohorts of 35.000 children than it is for twice that many children, other parts of the education system may also see the numbers of students decline. This is already apparent in institutions for primary, middle and high school, where classrooms are becoming available for ECD (Iltus, S. and Osicka, T., 2006), and it will be a matter of time before it will be noticeable in higher education. In a manner of speaking: the last large age cohorts (those born before 1990) are moving through and out of the education system²⁴, leaving authorities with a lesser financial burden every year. Understandably, the financial resources that are being freed up in this way are now being used to improve quality in primary, middle and high school as well as higher education, and also to extend coverage of the latter, but the change is so massive that it should be possible to also use a part of it for ECD. Compelling arguments to do this in Armenia have been reviewed in chapter 2 of this report.

All of this represents a historically unique opportunity to invest in the expansion and renovation of the ECD-sector. Up until recently, governments have faced the challenge to develop their education systems against the backdrop of ever rising number of children. This is still the case for developing countries, while OECD countries generally have stable child populations nowadays. Declining student numbers, however, are unique, and for Armenia (and other countries in the region) this provides a window of opportunity for expanding the coverage of ECD and improving its quality. If we look at the pyramid for 2020, we see a large working age population, tasked to provide education to but a small number of children.

The pyramid for 2020 also shows a new challenge coming up: massive retirement (or at least economic inactivity) for the post-war generations that are much larger than the previous generations. This will create a new financial problem for Armenian society and it implies that we could even determine a “deadline” for the revitalization of ECD in Armenia: the sector will have to be sound and brought to scale within, say, the next decade or otherwise it might again be threatened by fiscal constraints.

²⁴ The series of three pyramids in Figure 3 illustrates this. For a much stronger impression of this trend, visit the US Census Website, and choose the “dynamic” representation. This shows how dramatically the picture changes for Armenia.

Economic and financial context

The extent to which the Armenian working age population will indeed be able to finance investments in ECD does not only depend on the size of that population, but also on economic development. Obviously, if the country would ever return to the high levels of unemployment of the recent past, it will be difficult even to finance social schemes. However, a quick scan of the websites of the World Bank, the Asian Development Bank and the International Monetary Fund found that these major international financial players see predominantly good prospects for Armenia. Double digit economic growth as of 2002 has fuelled the economy (National Statistical Service of the Republic of Armenia, 2007a:20), even though growth depends rather strongly on the construction sector and less on sectors that are less sensitive to the business cycle (National Statistical Service of the Republic of Armenia, 2007a:19). Growth in employment is less spectacular, even in the construction sector (National Statistical Service of the Republic of Armenia, 2007a:52).

Public expenditure has remained stable as a share of GDP (National Statistical Service of the Republic of Armenia, 2007a:20), but in absolute amounts it must of course have grown at the same pace as GDP. The education budget has benefited from both absolute and relative growth, reaching 3.4% of GDP in 2009, after much lower figures in the past. A further growth towards, for example, the OECD average, would easily mobilize the resources needed for substantial investment in ECD, even if other education sectors would continue to require increased financial support.

A point of criticism is that economic growth has not yet spilled over sufficiently to all layers of society. As the World Bank puts it, "Growth needs to become more "pro-poor." This is relevant for our analysis in two ways. First, if and in as far as one wishes that parents pay fees for ECD, it is important that they are able to afford this. Second, a part of the diagnosis of the problems in ECD is that female employment is currently much lower than it was, and that this takes away both an important stimulus to enrol their children in ECD and the financial means to do this²⁵. Throughout the country, but especially in the poorer regions, many fathers work abroad, while mothers remain at home. In terms of employment policy, this creates a workforce buffer at the macro level: as economic growth spills over and creates more employment opportunity at all levels and in all regions, this may first tend to reduce foreign male employment before it fully enhances domestic female employment. This uncertainty regarding parents' socio-economic situation will need to be taken into account in scenario development. A positive trend

²⁵ In fact, female unemployment is the most frequently mentioned reason for non-attendance (National Statistical Service of the Republic of Armenia, 2007a:81, quoting Armenia Integrated Living Conditions Survey 2006)

is the continuous improvement in Armenia's system for social transfers and its impact on poverty (National Statistical Service of the Republic of Armenia, 2007a:87-95).

Regarding international assistance, it must be noted that the economic advancement has made Armenia a middle income country and as such unlikely to receive as much assistance as in the past. At US\$ 84, net aid per capita it is already the second highest of the nine countries in the region "Central Asia", while GNP per capita is second highest in that region as well (UNESCO, 2007:245). The combination of high aid and high income makes growth of aid unlikely. However, ECD in Armenia is blessed with specialized and focused forms of support from World Bank, UNICEF, Save the Children and Step by Step. Remittances, worldwide more than twice as large as official development assistance, are very important for Armenia with its large Diaspora, but they too tend to decline as prosperity grows; moreover they benefit the rich more than the poor (National Statistical Service of the Republic of Armenia, 2007a:64).

Costs analysis of kindergarten

Having looked at the demographic, economic and financial context for ECD in a general sense, we now zoom in on the costs of ECD and their respective elements. As we will also do in the next chapter on scenarios, we will depart from the situation as it is and from there look at alternative options.

Table 5 compares the unit costs (i.e. annual costs per child) of traditional kindergarten in Armenia with those of two other countries in the CEE/CIS region, as well as the average for OECD countries and an estimate for developing countries. These unit costs include all cost components, ranging from personnel and food to maintenance and repair of buildings. It should also be noted that this concerns costs, irrespective of how costs are covered or shared (state, community, parents). In order to compare such costs between countries, it is not enough to convert into one currency (e.g. dollar or euro), since there may be important differences between countries and regions in terms of wealth. In a country where both prices and wages are lower, the cost in terms of dollars may be lower than elsewhere, but access to kindergarten may still be less affordable. Therefore it is common to express unit costs as a percentage of per capita GNP, as has been done in Table 5.

Table 5: Unit costs for ECD expressed as percentage of GNP, in Armenia and selected other countries and areas, 2004-2006

Country/area	ECD unit cost as a percentage of pcGNP
Armenia	21.6 (2006)
Moldova	34.5 (2005-2006)
Kyrgyzstan	21.1 (2006)
OECD	19.0 (2004)
Developing countries	12.5 (model)

Source: calculations by the author based on information found in Iltus and Osicka (2006), McLean (2008), Orivel et al (2007); on exchange rates; and on pcGNP data from UNESCO (2007). The figure for “developing countries” is from Van Ravens and Aggio (2008); this is not an empirical figure but a model estimation that has found to be broadly consistent with unit costs in developing countries.

While one would perhaps expect that the CEE/CIS countries would find themselves somewhere in between OECD countries and developing countries, they rank in fact higher than countries in both these areas. Since we have controlled for per capita GNP, this suggests that kindergarten is genuinely more expensive in the CEE/CIS region. Orivel et al (2007:4) suggest a number of reasons: there are more educators per pupil in the CEE/CIS region; there are more non-teaching staff; sleeping is more common; and warm meals are more common.

We examine these and other cost “parameters” hereunder more closely. More in general, it has already been noted in a footnote in chapter 3, that kindergartens in the former Soviet Union were better equipped than those in North America and Western Europe ever were. They are typically the result of a combination of a high level of dedication to education and an almighty state that has the power to free up the resources needed for maintaining high standards in terms of pupil-personnel ratios and space for playing and sleeping. As we shall see in the last chapter of this report, a return to that situation is as unaffordable under market conditions as it has always been in “the west”. And if attempts to restore the system go hand in hand with charging fees, this may be at the cost of the poorer families. This can be simulated as follows:

- At present, all Armenian communities together are providing access to about 20% of all children, covering 82% of all costs, and receiving the remaining 17%²⁶ in the form of fees from parents.
- One could say that this represents certain market equilibrium: demand is constrained by the purchasing power of parents, while supply is constrained by what communities can afford.

²⁶ More precisely: 81.6% comes from communities, 16.7% from families, and 1.7% from other sources (Iltus and Osicka, 2006:2)

- Suppose that over time more parents could afford the fee, e.g. as a result of rising family income or social transfers.
- In response to rising demand, communities would be willing to open more classes in more kindergartens, but it is highly questionable that they could afford to pay 82% of all costs for not 20% but 40% of all children. Community's budgets are not elastic to demand. The 82% for 20% of the children is what they can afford now, and for 40% of the children they may only be able to finance, say, 60% of all costs. In that case, fees would go up from 18% to 40% of the cost price, and demand would go down again. The new equilibrium could be achieved at 30% enrolment rather than at 40%.
- Expanding demand in this manner (i.e. by leaving the cost sharing architecture at community level as it is and refraining from state intervention) will be a very slow process, and it will reach the poorest groups last, if ever.

It is for this reason that in chapter 5 we will look not only at low cost options, but also at new modalities for cost sharing.

Costs components of kindergarten

Several interviewees have questioned the need for dormitories in kindergarten for the senior age group. There have been pedagogical arguments in the past for introducing this, and it happened with the best of intentions, but views are now different. MacLean (2008) has shown graphically how the total capacity of a kindergarten building can augment if dormitories are turned into classrooms.

Figure 5: use of physical space in traditional full day kindergarten versus half-day

Sleeping room with cots	Sleeping room with cots	Class/play room (Two shifts i.e. 20 + 20 = 40 children)	Class/play room (Two shifts i.e. 20 + 20 = 40 children)
Class/play room (20 children)	Class/play room (20 children)	Class/play room (Two shifts i.e. 20 + 20 = 40 children)	Class/play room (Two shifts i.e. 20 + 20 = 40 children)

Source: MacLean (2008:46-47)

The figure shows that the capacity of the physical space in a traditional kindergarten can double from 40 to 80 if sleeping is skipped in the programme, and that it can quadruple to 160 if at the same time the kindergarten would introduce morning and afternoon shifts (an idea that we will discuss later in this chapter). Obviously, this measure would also reduce furniture and bed linen costs as well as labour and cleaning costs. This is confirmed by the experience with the pilots in Armenia.

A similar story can be told for the tradition of serving hot meals. Undoubtedly this was once introduced to ensure that even children from the poorest groups in society receive a certain threshold of nutritional value. And clearly, there are currently children in Armenia who are not sufficiently nourished as we saw in chapter 2. But the reality is that today only 20% of the children have access to kindergarten, and that the poorest children are hardly among them. The simulation above showed that it is unlikely that this service can be expanded to ever reach the poorest. More direct and cost-effective ways will have to be pursued to achieve good nutrition for all.

However, while removing sleep-time and hot meals from the programmes would save costs, it also creates problems. Staff of kindergartens that were visited reported that although many parents regret that they cannot take their children home at noon, there is still some demand for full day care. Moreover, there is a tradition in jeopardy. Or, as one of the interviewees put it: this country has an asset, and that is the institution of the kindergarten as we know it. Where it still functions, it is the focal point for child care in a community. Finally, it is certainly not the intention of this report that highly dedicated non-teaching staff – many of them have been serving kindergartens for decades with great loyalty - lose their jobs.

So the question is: by which arrangement could we introduce cost-effective, short programmes for the 4 and 5 year olds focusing on school-preparation, while at the same time retaining the full day care programme of the kindergarten for those families who have the need? One way of resolving this – and this will play a role in development of scenarios in chapter 5 – is by

- defining a certain “core curriculum” of services that every child should receive; this could consist, for instance, of a school preparation programme of 3 hours per day, 5 days per week and 32 weeks per year, that meets certain quality standards;
- making this available in such a way that even children of poor families can afford it;
- allowing not only kindergartens but also other suppliers (NGOs, community centers, private institutions) to offer this programme, on the condition that they be accredited;
- allowing kindergartens to continue to offer their traditional full day care programme – including hot meals and dormitories, if they want – but

on the condition that parents cover the extra costs (beyond the core curriculum) themselves.

In other words, the core curriculum would become the essential public service which is affordable to all (and possibly compulsory), while any additional services are delivered against the cost price. The assumption behind this arrangement is that the pressing need for full day care is mainly felt by families where both parents work, and that these double income families normally have the means to pay the fee. From a social justice perspective, this is fairer than the present situation in which most of the public resources are invested in children of families who can afford the fee.

Admittedly, this solution is not entirely unproblematic. For instance, working single parents would still have a problem in this arrangement, as well as couples who both work against low wages (e.g. in agriculture or in the informal economy). In these cases, targeted subsidies could provide a solution, given the fact that Armenia currently has a well-developed infrastructure for social transfer to special groups (National Statistical Service of the Republic of Armenia, 2007a:87-95). On balance, this approach may well have as a result that the additional enrolment would eventually consist mainly of children who opt for just the core package, but that the enrolment in traditional full day-care programmes would remain at more or less the present level in absolute terms. No jobs, and no traditions would be lost compared to the present situation; in fact many extra jobs would be created, though mainly for teaching staff.

ECD personnel: their remuneration and their professional development

The overall costs of personnel are determined by their number and their salary level, and there is a trade-off between the two.

In Armenia, there is one staff member for every 4.4 children (Iltus and Osicka, 2006:48). For the OECD the ratio is much higher at 14.8 (Orivel et al, 2007:4). Again, we are looking at a heritage from the past that seems unaffordable under market conditions. The immediate consequence of having 4.4 staff members per child on heavily constrained budgets is that the small salary lump sum must be divided over too many people, so that salaries are low. On its turn this leads to high turnover, forgone productivity and high training costs. Many new kindergarten teachers leave within a few years because of the low salaries. This means that new colleagues must be introduced frequently, which always coincides with a few months of relatively low productivity. Additional (in-service) training must also be repeated more often than in the case of low turnover. Finally, the Pedagogical Faculties that

“deliver” the new entrants in the profession must “produce” more graduates, even if this is a hidden cost from the perspective of the kindergarten.

It is urgently necessary to break this vicious cycle by addressing staff efficiency in the kindergartens, so that the salary lump sum can be divided over less staff members, resulting in higher salaries per person and longer retention in the workplace. An extra argument to do this is that if ECD will be expanded substantially in the coming years – which is the very aim of present ECD policy – this will require a lot of extra staff, nationwide. This will be very difficult if the staff-to-child ratio were maintained at 4.4. The perspective of substantial ECD expansion implies that present kindergarten staff do not have to worry about their jobs in case of an adjustment of the staff-to-child ratio²⁷.

Regarding the professional development of ECD personnel, the time may be right for a reorientation. The aforementioned Pedagogical Faculties are the traditional places for the initial (or pre-service) training of educators. Various interviewees reported that they are heavily under-funded and see no other options under the current budget than to lecture to large groups of students by reading books that the students already have. Within a four year programme, the students follow only two short internships in kindergartens, one in which they observe the lesson, and one in which they actively teach under the guidance of a staff member. And while important stakeholders in the area of in-service training – such as the National Institute of Education, Step by Step, World Bank, UNICEF – work in tight networks, the Pedagogical Faculties seem to work in some degree of isolation.

On the one hand, this information is “hear-say” and it would not be appropriate to base the analysis on it. On the other hand, all interviewees that commented on the situation have the same view. On balance, it seems reasonable to propose a “re-thinking” of initial teacher training along the following lines.

- Worldwide there is growing interest in alternative and more flexible routes into the teaching profession (partly as a result of the global teacher shortage),
- One of the ideas that plays a role is that people who have the talent and the motivation to work with children can often function very well after a relatively short period of initial training, provided that they (i) are well guided by more experienced colleagues; (ii) are frequently trained after entry; and (iii) start with simple tasks rather than complex ones (OECD, 2005b, UNESCO, 2004:161-163 and 177-179).
- In other words: Pedagogical Faculties may partly shift the emphasis from pre-service to in-service training, strengthening their connections with

²⁷ Obviously there is a limitation in that non-teaching staff are often not qualified beforehand to assume teaching jobs. However, with focused additional training, many of them could make that step, and in many cases it would be a good reward for a long period of dedicated service.

the field, enhancing the relevance of their work, and joining the network of organizations that are active in supporting kindergartens.

- If both the Pedagogical Faculties and the kindergartens are open to innovations, this will open up a range of possibilities such as:
 - Short initial training programmes for motivated people to become a class assistant,
 - Class assistants may require full teacher qualifications through a combination of validated work experience and additional (in-service) training,
 - Shortening the four year initial programme for people with relevant prior experience and/or prior qualifications (for instance former primary school teachers, nurses, social workers)
 - Strengthening internship by students and allowing them to work for more substantial periods for a moderate salary (work-based learning),
 - Developing short in-service programmes to support experienced teachers in working with and providing guidance to less qualified assistants,
 - Developing special, short programmes for people working in special settings, such as parents who operate a home-based programme in an isolated hamlet.

On the assumption that ECD personnel will be more differentiated and that their salaries will gradually improve, the following salaries will be assumed for the scenarios (though they can be altered by the reader in the accompanying excel-file):

- US\$ 50: class-assistant, working student;
- US\$ 75: qualified parent who runs home-based programme;
- US\$ 100: ECD teacher (this is 2 times the minimum wage as the Law on Preschool Education requires);
- US\$ 125: facilitator who provides parent support (group-wise, individual, home-based);

Finally, we assume (i) that the monthly salary will be paid 12 months per year (no interruption during summer- and winter-breaks) and (ii) that salaries are proportional to the number of working hours per week. E.g. someone who runs a home-based programme of 3 x 5 hours per week is assumed to work 20 hours per week (3 x 5 = 15 contact hours plus 5 hours for non-contact activities), will receive 50% of US\$ 100, not the full salary.

Capital investment versus recurrent costs

It is common accounting practice to distinguish capital investment costs (e.g. buildings) from recurrent costs (e.g. salaries and food). Capital investment is a once-only or incidental affair, while recurrent costs are continuous. This conception has some disadvantages. Capital investments are not the

only incidental costs; e.g. a training programme needed to introduce a new pedagogical approach can be incidental. However, the distinction with regular (recurrent) in-service training is not always clear, and if turnover is high, that distinction may disappear altogether. Vice versa, not all capital investment is incidental. Buildings depreciate, and inventory needs to be replaced more frequently than the building. Iltus and Osicka (2006) have therefore used the term “start-up costs” for any incidental costs, while “transition costs” would also be a possibility, but choosing the right term alone does not resolve questions regarding incidental costs, such as: what is the life cycle of a building, of furniture, of a training course?

In the case of ECD in Armenia we can perhaps simplify the matter as follows. It has been clear from the beginning, that expanding ECD will not – or not necessarily – require the expensive construction of entirely new buildings. Kindergarten buildings are still standing where they used to – though some have been sold - while in communities where they never existed there is usually a school. In hamlets where even schools are absent, ECD services will not be massive events and they can be provided in homes. Thus the issue is mainly to refurbish kindergarten buildings or spaces in schools or other existing buildings. This too has its costs, but these are not insurmountable. It was decided in September 2008 that a substantial number of kindergartens would be prepared and equipped with financial assistance of the World Bank in the framework of the second phase of the Education Quality and Relevance Project (EQRP). Partly this relates to the upgrading of existing kindergartens, and partly to the creation of new facilities within existing schools buildings. Some bilateral development agencies are known to be active in this area as well, while some kindergartens have made use of work-experience programmes for unemployed people to fix up rooms. In other words, while the overall investment costs should certainly not be underestimated, it is not unreasonable to expect that over time communities will find ways with local, national and international assistance to cover them gradually, as enrolment expands. Thus, we will follow the example of Orivel et al (2007:7) to treat investment costs separately from recurrent costs. Training will in all cases be seen as a recurrent issue, since continuous training is expected to be a hallmark of a revitalized ECD sector.

Public and private

Private and company based kindergartens have a market-share of less than 2% in Armenia (Iltus and Osicka, 2006:2). There are no signs that they will soon play a significant role in the inclusion of vulnerable groups. Consequently the original pilot model 4 has been dropped. For this reason, private and company based provision will not play a role in the scenarios in the next chapter.

A more relevant issue is that of the cost sharing between public actors (state and community) and private ones (predominantly family). This already came up when introducing the distinction between the core curriculum versus additional services. There are a variety of ways to ensure that the core curriculum can be afforded by all. One is simply to provide it for free, exactly like regular education. Under the current spirit of decentralization this would imply that all communities need to be able to finance the core curriculum for large numbers of children. This could be linked with a plan of the Ministry of Territorial Affairs (see chapter 3) to allocate earmarked resources for ECD on the basis of a set of criteria that favours isolated and poor communities.

Alternatively, the state could guarantee access to the core curriculum in a more direct way, by per capita funding to communities. Another option is to charge fees for the core curriculum, while waiving or compensating it for families below a certain income threshold. This can be done by actors at the local level or by conditional cash transfers from the state, using the existing infrastructure for social transfers (disbursement channels, the Family Means Testing Database, et cetera). This approach would be consistent with the proposal to make healthcare available for the poorest groups (National Statistical Service of the Republic of Armenia, 2007a:75-76).

V. Scenarios

The approach in this chapter is inspired by an OECD scenario project called “Schooling for Tomorrow” (www.oecd.org). The main function of the scenarios is to cluster the ideas and notions that were presented in preceding chapters into a limited number of development perspectives for ECD in Armenia. The scenarios lack the precision to be the basis for concrete planning, but are realistic enough to show differences between alternative policies in terms of coverage and costs. While the OECD has formulated six scenarios, this chapter builds on four of those, although they have been profoundly adapted to suit the specific terrain of ECD in Armenia.

Each of the scenarios is based on a certain vision of the future of ECD, captured in the title, and they range from less ambitious to more ambitious.

- **Restoring the System.** In this scenario, the existing system is not subject to substantial reform. Attempts are made to reinvigorate it, reopen kindergartens, and to expand enrolment and coverage. From preceding chapters it is already clear that this scenario is unlikely to be feasible, but it needs to be included as a “zero-change” reference point.
- **Academic Performance.** While existing kindergartens continue to function in this scenario, the emphasis is on enrolling all 5 year olds, and consequently many 4 year olds, in short programmes with a strong focus on improving school readiness.
- **Kindergarten as a Social Center.** This scenario adopts a broader vision on ECD, focusing on all aspects of child development, not just learning, and on the whole age range from 0-6. The kindergarten, or ECD center as it may be called, sits at the heart of the local community, and its team is open to all questions parents may have. There is a resemblance to the so-called multifunctional school or community school, in the area of education.
- **Networks for Early Childhood Development.** Covering one large community or several small ones, ECD Districts cater to the whole catchment area by providing an array of services, ranging from the traditional full day care programme, to group-wise and individual parenting education and support to home-based programmes in small hamlets. All Districts are large enough to have strong management, a professional development policy, the potential for continuous innovation, and a complete palette of professional disciplines.

The scenarios are not mutually exclusive. One could start with the second scenario (this is actually very likely) but could experiment with the third in one region and the fourth in another.

The first three scenarios are underpinned by calculations in Excel-files that are made available to the reader²⁸. These calculations are constructed in such

²⁸ For the fourth scenario this was not feasible for reasons explained later in the text.

a way that all “inputs” can be altered, especially for scenarios 2 and 3. E.g. if the reader disagrees with the values of the parameters of the model (such as group size, number of hours per day, teacher salary) s/he can alter these values and this will affect the outcome. The Excel-files were derived from a model that was initially made for estimating the costs of expanding ECD in a number of countries (Van Ravens and Aggio, 2008). It has been translated to one single country (Armenia) and now it distinguishes the eleven Marzes. It should be noted that the population data for the Marzes, too, can easily be adapted. With a bit more effort, the model can be translated to a single Marz, distinguishing its respective communities.

Scenario 1: “Restoring the System”

As said, this scenario is probably not feasible but it serves as a reference point. The assumption that underlies the scenario is that there will be insufficient political and/or professional support for reinventing the current kindergarten system. Alternative models do not receive enough backing to be scaled up; the obsolete norms and standards are not revised, and full day-care with hot meals provision and dormitories remain the core service of the ECD sector. Table 6 shows the costs per Marz and for the country, for three sub-scenarios.

Table 6: Annual costs under scenario 1 “Restoring the System”

				2 year olds 10%	
				3 year olds 30%	
Marz	Age cohort	Current situation		4 year olds 100%	
		20% enrolment	5 year olds 100%	5 year olds 100%	
Yerevan	11311	489976	2449881	5879715	
Aragatsotn	1660	71917	359586	863006	
Ararat	2995	129761	648803	1557128	
Armavir	3083	133547	667736	1602565	
Gegharkunik	2838	122954	614768	1475442	
Lori	3132	135657	678287	1627888	
Kotayk	3110	134704	673522	1616452	
Shirak	3098	134202	671011	1610428	
Syunik	1593	69016	345078	828188	
Vayots Dzor	625	27058	135291	324699	
Tavush	1556	67407	337037	808890	
Armenia	35000	1516200	7581000	18194400	

Source: derived from Excel-file “scenario 1: Restoring the System”. This file contains a detailed explanation of the calculation.

The first sub-scenario, in the column “current situation: 20% enrolment” we find an approximation of the present expenditure. The numbers of children under “age cohort” have been multiplied by 20% (the present enrolment level) and then by the unit cost of US\$ 216.60 (Iltus and Osicka, 2006:2). It can be seen that current expenditure in Armenia must be in the order of magnitude of US\$ 1.5 million (i.e. the figure in the bottom row of the column “age cohort”), of which about one third is spent in Yerevan (upper row). Parents contribute 16.7% of this money, while contributions from the public purse (communities) amount to 81.6%, which is about US\$ 1.25 million. Note that both the unit cost of US\$ 216.60 and the assumed cohort size of 35.000 can be altered in the Excel-file for scenario 1. The file automatically re-calculates the cost-estimations.

The second sub-scenario shows the level of expenditure needed to enrol all of the 5 year olds in the traditional, full day care kindergarten programme: US\$ 7.5 million. It is already known that not all parents can afford the 16.7% fee, so in order to realize this scenario, communities should contribute a larger share than the 81.6% that they pay in the current situation. On the assumption that their share rises to 90%, communities’ total expenditure will rise to some US\$ 6.8 million.

The third sub-scenario sketches the picture of universal enrolment of 4 and 5 year olds, combined with some degree of enrolment among 2 and 3 year olds (as is presently the case) which are likely to be children of middleclass and/or double income families. Total costs would then rise to approximately US\$ 18 million. Even in this case most children in the critical age range of 0-3 are not attended to except by the home visiting programme of the Ministry of Health. The costs of including all of the 0-6 in kindergarten will be so high that there is little point in making the estimation.

Capital investment costs – which are excluded from the estimation for reasons explained in the preceding chapter – will be immense, for not only is it necessary to renovate and refurbish many, if not all, of the abandoned kindergarten buildings, it may actually be necessary to buy or construct new ones.

Scenario 2 “Academic Performance”

The motto for scenario 2 is “academic performance” since it focuses on boosting the school-readiness of 5 year olds (plus, eventually, 4 year olds) right before entry in primary school. In other words, the scenario addresses the most pressing need for the coming years, while it still leaves the option of further expansion to the 0-4 group wide open (see next scenario).

Consistent with international good practice, the core service in this scenario

consists of a curriculum of 3 hours per day, 5 days per week, and 32 weeks per year, making 480 hours per year. Meals and dormitory are not provided. This restrictive approach has not been chosen because we do not want to give more to children, but because by choosing a minimal approach for the time being, we can enrol more children on a given budget. As said, kindergartens will continue to offer the full day-care programme for double-income families, but against a substantial fee.

Furthermore, we assume a group-size of 20, and a salary for the teacher of US\$ 100 per month, in accordance with the Law. As suggested in chapter 4, this salary is paid during all 12 months of the year without interruptions for summer- and winter-breaks, but at the same time it is proportional to the real number of weekly hours that the teacher works. The normative schedule equals 40 hours per week during 45 weeks per year (i.e. 1800 hours per year), which results in a salary per hour of US\$ 0.67. But a teacher who attends just one group only works 480 hours per year, augmented with a certain “overhead” (set at 20%) for preparation of lessons, professional development, meetings with colleagues or parents, et cetera. The actual salary of this particular teacher thus becomes $480 \times 120\% \times \text{US\$ } 0,67 = \text{US\$ } 386$ per year. However, the teacher can double this salary by attending one group in the morning and one in the afternoon. He/she can further augment the salary by also attending one or more groups of parents (see next scenario).

Obviously, the group size has an impact on the unit cost as well. The larger the group, the lower the cost per child, but the trade off is that the quality of the service is at risk if the group gets too large. For the moment, we work on the assumption that the group size is 20.

Regarding the material costs that bear on the unit cost, we propose the sum of US\$ 20 per child per year. The underpinning is as follows. Iltus and Osicka (2006:49, Table 3.1) have costed out a number of material cost items for the traditional kindergarten programme. The total is about US\$ 55 after we subtract the costs of food (the core package of this Academic Performance scenario is without hot meal and sleeping). However, this US\$ 55 is still a strong overestimation, since children who attend the 15 hour per week programme “consume” much less space, electricity, water, furniture, et cetera. As Figure 5 in the preceding chapter shows, the per child cost of space (and hence of heating and other costs) becomes four times less if one goes from single-shift teaching with sleeping to double-shift teaching without sleeping. A problem with this argumentation is that not all communities have the scale to make these efficiency gains. Therefore we divided the US\$ 55 not by four, but by a smaller figure, ending up with US\$ 20.

It must be emphasized once again that all the figures that were proposed

above are open for debate, and the reader is encouraged to open the Excel file of scenario 2. This file is based on the same logic as the file for scenario 1, except for the unit cost. This is calculated on the basis of the parameters that can be found in the pink field. All the red figures (hours per week, group size, et cetera) can be altered, and the file automatically recalculates both the unit cost and the costing outcomes (green figures).

Table 7 shows the outcomes of the exercise under the above parameters for three sub-scenarios.

Table 7: Annual costs under scenario 2: “Academic Performance”

		4 year olds 0%	4 year olds 50%	4 year olds 100%
	Age cohort	5 year olds 100%	5 year olds 100%	5 year olds 100%
Yerevan	11311	386823	580235	773647
Aragatsotn	1660	56777	85165	113553
Ararat	2995	102443	153664	204885
Armavir	3083	105432	158148	210864
Gegharkunik	2838	97069	145603	194137
Lori	3132	107098	160647	214196
Kotayk	3110	106346	159518	212691
Shirak	3098	105949	158924	211898
Syunik	1593	54486	81729	108972
Vayots Dzor	625	21362	32043	42724
Tavush	1556	53216	79825	106433
Armenia	35000	1197000	1795500	2394000

It can be seen from Table 7 that the annual cost of providing a good school preparation curriculum to all 5 year old children in Armenia would cost about US\$ 1.2 million, which is less than the US\$ 1.25 million that the Armenian tax payer presently contributes to providing the full day care package to just 20% of the children.

If we subtract the 20% that are already enrolled from the 35.000 that need to be served, then the additional costs of enrolling the remaining 80% of the five years olds are US\$ 958,000.

The next step in this scenario could be the enrolment of disadvantaged children of four years old. Their number depends of course on the criteria one adopts for being disadvantaged, but just on the working assumptions that 50% of the four year olds enrol, total cost would rise to about US\$ 1.8 million, or to about US\$ 1.5 million if we subtract once again the ones that

are already enrolled. Universal attendance of 4 and 5 year olds would cost the Armenian society about US\$ 2.4 million, or about US\$ 2 million after subtraction of those already enrolled. It is possible that the inclusion of 4 year olds is less costly than Table 7 suggests, since working with two age groups enhances cost-efficiency by double-shift teaching, especially in the smaller communities where there are not enough 5 year olds to fully occupy the facility.

Scenario 3: “Kindergarten as a Social Center”

This scenario goes a step beyond “Academic Performance”. It includes the achievement of the former scenario in providing school preparation for the 4 and 5 year olds, but it also addresses the 0-4 group through parenting education programmes. In this way, ECD in Armenia would comply with the 4+2 model promoted in the “Four Cornerstones”, an authoritative advocacy statement by the Consultative Group on Early Childhood Care and Development (2008), in which UNICEF, the World Bank and several other leading agencies in the field of ECD are represented.

Parenting education is generally seen as a cost-effective way of improving child-rearing practices within families (Evans, 2006). Monthly or bi-weekly sessions of groups of about 20 parents, addressing a range of subjects that are partly fixed and partly chosen by the group have proven to have an important and lasting impact on child development. The high degree of cost-efficiency²⁹ is partly caused by the fact that one facilitator can reach 20 families in just one session, while s/he can attend several groups simultaneously, depending on the frequency of the sessions per group. Moreover, parents with more than one child only have to attend the sessions once to let all of their children benefit; in other words, the unit cost per child will be lower than the unit cost per parent, even in countries with relatively low fertility rates such as Armenia. Some parenting programmes apply home visits instead of, or in addition to, group-wise parenting education. Obviously, this approach is more costly; this will be addressed in the fourth scenario.

Scenario 3 is inspired by ideas about and experiences with the multifunctional school, also referred to as the community school. The philosophy is that schools – and kindergartens or ECD centers for that matter – not only take care of their traditional core business of delivering a programme, but open up to the community and reinvent themselves as local centers of expertise

²⁹ In Gavar, a pilot was started a few years ago in order to experiment with parenting education. This pilot was visited during the preparation for this report. The appreciation of the participants appeared to be very high. However, Iltus and Osicka (2006:1) report a very high unit cost for this pilot, even after excluding the costs for food (that participants were said to be prepared to pay for by themselves). This challenges the claim that these programmes are very cost-effective. A possible explanation is that this particular pilot has not yet set clear limits to the service. The programme has a high frequency, goes on for many years, and continues to enrol parents after their children have enrolled in the kindergarten programme as well.

for learning (in the case of schools) or for early childhood development (in the case of kindergartens). Many kindergartens in Armenia have already commenced thinking and working along these lines, while several pilots and experiments have incorporated elements of it. Opening up to parents, involving them in the work of the kindergarten and helping them to improve their parenting skills and knowledge is by no means a new phenomenon.

Just as multifunctional schools do, kindergartens in this scenario would provide a range of services, including not only the “core business” of focused school preparation programmes (see scenario 2) and of parenting education, but also more or less commercial services such as (i) traditional full day care; (ii) “extended hours” beyond the traditional programme for parents who cannot always pick up their children at the regular hours; (iii) occasional care for children beyond working days; (iv) the organization of parties for children; (v) renting the facilities for the parent programme (e.g. the premises, video equipment) for meetings and presentations in the evening; et cetera. The kindergarten would become a not-for-profit organization, making some profit in order to reinvest it in the public service for which they are accountable. Vice versa, the kindergarten itself may use several premises, e.g. the traditional building for day-care, classrooms in primary schools for the school preparation programmes, and a community center for the parenting programme.

For the costing of the scenario “Kindergarten as a Social Center”, we focus on the public core service, which is the delivery of four years of parenting education for the 0-4 year olds, followed by two years of universal school preparation for the 4 and 5 year olds. The Excel-file for this scenario once again builds on the previous two files. The main difference with scenario 2 is that a “module” for the costing of the parent education programme has been added to the one for the school preparation.

The parameters for parenting education are the following.

- Normally, 15 participants against one facilitator is seen as an optimum for adult learning activities, but working with two facilitators is often recommended for interactive approaches, in which case group size may be up to 20. To reduce cost, one facilitator can be an assistant at US\$ 50 per month (see preceding chapter) provided that the other is a qualified expert at US\$ 125. In practice, part of the sessions would be attended by an invited expert, e.g. someone from a health center or a university. Often these are volunteers or they work while being paid by their employers. In other cases a financial compensation may be necessary. However, to have three staff members (expert, assistant and invited expert) attend a group of 20 is overdone, and we assume that the compensation for the expert can be traded off with the reduced necessity for the assistant to be there.
- The aggregate annual salary of the facilitator and the assistant is US\$

1500 plus US\$ 600 = US\$ 2100, while the normative number of hours per year is 1800 (see scenario 2), resulting in an aggregate salary costs per hour equal to US\$ 1.167.

- An existing parenting programme in Gavar (see footnote 27) works with full day sessions. This is a bit long given the high frequency. Sessions of three hours would be a good alternative; it allows an ECD center to use one room twice or even thrice per day (morning, afternoon, evening) while there is no need for a meal. As the facilitators need time for preparation and organization, we assume they work 4 hours for each session of 3 hours. Total salary costs per session, then, are US\$ 4.67.
- Programmes in Armenia have a frequency of twice a month during 9 months, making 18 sessions per year. Combined with a full day programme, this is a relatively high frequency, but combined with three hours sessions it would be more in accordance with general standards. However, there is a case to be made for a differentiated frequency, with more sessions during the first years of the child's life, and less sessions later on.
- Regarding material costs, it can first be noted that each parent spends about 60 hours making use of the facility. This is much less than children in the school preparation programme, so one would consider taking children's material unit cost of US\$ 15 as a starting point and divide it by an according factor. However, parents need their own furniture for obvious reasons, while investment in audiovisual equipment, books, magazines and stationary can be quite expensive. The problem with these items is that they are neither incidental nor recurrent, but somewhere in between (with a depreciation period of a few years). Furthermore, there is the issue of scale; not every community is large enough to occupy the facility for the parents during the full week. Taking all this into consideration, we assume a material unit cost that is relatively high for the short per capita duration of 60 hours, namely US\$ 20.
- The coverage of parenting education is difficult to predict. While the school preparation classes for the 4 and 5 year olds will probably be attended by all children – one could even consider making it compulsory, as some countries have done – it is not likely that all families will attend parent education. First, there are the double income families where neither of the parents may have the time, and where children are likely to be cared for in kindergarten (regular, private or company-based) or in informal settings. Second, there are probably many families who do not see the need to attend parenting education, and who, partly, may actually not have the need (e.g. non-working parents with a higher education background). To resolve this, the Excel file for scenario 3 has a coverage factor (in the light-blue field), which the reader can alter. For the time being, the coverage factor is set at 60, meaning that we assume that 60% of all families with children of 0-4 will make use of the offer.
- Finally, there is the “family composition factor”. This has to do with the

fact that families with two or more children do not need to follow the same programme two or more times. Following it once as the first child is born and grows up is enough to acquire the knowledge and the skills, and these can then be applied to the next child or children. (This logic does not apply to programmes with a strong health component which includes the distribution of material items such as medication and nutritional supplements, or for programmes with “toolkits”). To calculate the family composition factor, we consider that the 497 out of 1000 households that have one or more children, have 921 children altogether³⁰. So by training 497 parents, one “covers” 921 children. The factor thus becomes 497/921 or 0.54.

Table 8 shows the costs of scenario 3.

Table 8: Annual costs under scenario 3: “Kindergarten as a Social Center”

	Age cohort	4 + 5	0+1+2+3	Total costs
Yerevan	11311	773647	89967	863614
Aragatsotn	1660	113553	13205	126759
Ararat	2995	204885	23826	228711
Armavir	3083	210864	24521	235385
Gegharkunik	2838	194137	22576	216713
Lori	3132	214196	24909	239104
Kotayk	3110	212691	24734	237425
Shirak	3098	211898	24642	236540
Syunik	1593	108972	12672	121644
Vayots Dzor	625	42724	4968	47692
Tavush	1556	106433	12377	118810
Armenia	35000	2394000	278397	2672397

In the column “4+5” we see the costs of providing the school-preparation programme to all 4 and 5 year olds; these costs are identical to the ones found in the right hand column of Table 7. Under the column “0+1+2+3” are the costs of providing parenting education for 60% of all families with children in this age range, based on the parameters discussed above. These costs are almost one order of magnitude lower than the costs of school-preparation, notwithstanding the fact that parenting education addresses twice as many children. Obviously, these costs will rise with coverage. But even if we raise coverage from 60% (as in Table 8) to 90%, the national costs of parenting education will rise from the US\$ 278,397 reported in Table 8 to just US\$ 417,596, which is still much less than the annual costs of school-preparation.

³⁰ National Statistical Service of the Republic of Armenia, 2007a:18. See Table 1.5, column for 2006.

Total costs, of school-preparation plus parenting programme, are about US\$ 2.7 million. The total costs are hardly sensitive to variations in the coverage of parenting education; they rise from US\$ 2.7 million to a little over US\$ 2.8 million if coverage goes up from 60% to 90%. For all the figures in this paragraph, it needs to be kept in mind that some children are already enrolled, so that the additional costs are lower than these figures suggest.

Scenario 4: Networks for ECD

This scenario makes the step towards a truly holistic and inclusive approach to ECD. To the children directly the full palette of services is offered, ranging from just school-preparation to full day-care and extended hours. For parents, the education programme is linked with the programme of the Ministry of Health, turning parent support during the first four years into a service that integrates learning, health and child protection. This programme is offered within kindergartens if one is available, in a school or community center where there is no kindergarten, or in any available setting in small hamlets. It reaches out to geographically or socially isolated families using individualized parent support.

Such home-visits can be combined with support visits to parents who run a home-based ECD programme in rural and/or mountainous areas. At present, Armenia has no experience with this ECD modality according to Iltus and Osicka (2006:28), who report that stakeholders have hesitations regarding home-based provision since volunteerism is usually not a success in Armenia. However, home-based provision is not necessarily based on volunteering. It is possible to pay the care-giver for the work and give a subsidy for equipping the room, if certain conditions and qualification requirements are met. And even when subsidized, home-based provision may still be a relatively cost-effective solution for reaching children in remote areas. Save the Children, with its well-known expertise in the area of community mobilization, is considering a pilot project for home-based ECD.

Operating in this manner requires a certain minimum scale (see chapter 3). Presently, only the larger kindergartens can afford to have specialists such as speech therapists, defectologists, music teachers, nurses, bookkeepers, service personnel, et cetera. With the move towards a holistic approach, even more disciplines must be included, and there needs to be the space and the capacity for mutual professional consultation, strong school management, entrepreneurship, ongoing policy development and innovation.

This is why the term “network” is suggested as the motto for this scenario. Several kindergartens need to cooperate closely and share facilities and human resources; the experience of Avan Community (see chapter 3)

may serve as an illustration. But since many communities are too small to have more than one kindergarten – some are too small to even have a school – it is proposed to introduce the concept of the ECD District. In the larger communities, this ECD District is congruent with that community, but especially in sparsely populated areas the District would include several smaller communities. Within their own “catchment areas”, ECD Districts Managers would be accountable for delivering a state defined core package of services to all children and parents, even in the smallest hamlets.

The financing mechanism that best fits this concept is that of a “lump sum” based on numbers of children and a set of “weights”. For every child, there is a certain unit cost depending on age and perhaps family characteristics, but for a child with a certain disability, the unit cost can be multiplied by for example a factor 1.2 or 1.9 or 2.3 or whatever, depending on how severe the disability is. Likewise, weights can be used to make it affordable for the ECD District manager to cover the transport costs involved in reaching isolated groups, or to provide toolboxes to providers of home-based programmes. The idea of a “lump sum” means that although the total amount of money that the manager receives is based on the unit costs and weights, the money does not have to be spent in exactly that manner. E.g., the manager may spend more on disabled children than the norms prescribe, by saving costs on other activities, or by using income from commercial activities. The manager would be held accountable for delivering outcomes (i.e. delivering the core package to all, at sufficient quality) and not for spending and inputs.

One could say that this mode of decentralization – with sufficient scale, managerial capacity and funding – is more in compliance with the Yerevan Declaration of Decentralization (see chapter 3) than the present situation. At the same time, it will be difficult to realize, since some ECD Districts will cut across several communities; it would further complicate the already complex legislative architecture. Yet, it is worthwhile to give this approach a try, because reaching the most remote children seems impossible without a modern, professional and flexible ECD organization that has enough creativity to develop innovative solutions, and enough autonomy to put them into practice.

For scenario 4, there is no Excel-file, since the assumption is that there is a lump sum based on “weighted” per capita funding. To simulate this funding model, one must know how many children in a catchment area live at a certain distance from a village or city, how many live under certain income thresholds, how many have disabilities, et cetera. Furthermore, one would need to avail of the information needed to determine the weights. The best way forward seems to select one Marz, preferably a smaller one with a high proportion of rural inhabitants (e.g. Aragatsotn, Vayots Dzor, or Tavush), and to make an in-depth simulation for a small number of communities that could

form an ECD District together. The Excel-file for scenario 3 could be a useful tool. The next step could be to experiment with this approach, provided that all community heads in question, as well as the Marz authorities, support the experiment. At the forefront it can be said that scenario 4 is likely to be more costly than scenario 3, because (i) it includes the same core package of school-preparation for 4 and 5 year olds plus the parenting education covering the earliest years, and (ii) it commits itself to reaching literally all children, if necessary through home-based programmes and home-visiting for the geographically or socially isolated. Such approaches are likely to be more costly than more common modalities, just as reaching the last groups is always more expensive than including the first, for any public service. However, the managerial model underlying scenario 4 would also enable the realization of synergies and economies of scale. Even without a detailed simulation, it seems defensible to say that scenario 4 is likely to be 5%, maybe 10% more expensive than scenario 3, not 50% or 100%.

Funding

The last issue for this report is funding. The aim here is to put the overall price tag of ECD expansion in a macro-economic perspective. As a reference point we take the US\$ 2.7 million that scenario 3 costs, which comes down to some US\$ 2.5 million after subtracting current enrolment.

The nominal GDP of Armenia was ADM 2,657 billion in 2006 (National Statistical Service of the Republic of Armenia, 2007a:20), which is about US\$ 8.8 billion at the current exchange rate. At the time of writing, in 2008, the GDP is probably higher. The share of the education budget of total consolidated budget expenditures has risen continuously between 2002 and 2006, and the same goes for the health budget. As a share of GDP, the education budget will grow to 3.4% in 2009, and this indicator too is on a permanent growth path. The 3.4% comes down to about US\$ 300 million in absolute terms. Finally, economic growth as such has constantly been in the double digits between 2002 and 2006, while the number of people below the poverty threshold has declined.

On the pessimistic assumption that spending on education will not rise beyond the level of 3.4% of GDP, a GDP growth rate of 10% (the lowest rate in recent years) would inflate the education budget by some US\$ 30 million annually, which dwarfs our ECD resource requirement of US\$ 2.5 million.

On the equally pessimistic, but nevertheless realistic, assumption that economic growth will slow down or stop as a result of the credit crisis, one can assess the impact of a rise of the relative education budget. If this would climb from the current 3.4% of GDP to for instance 3.8% (which is still far from the OECD average), the education budget would grow from the current

US\$ 300 million to US\$ 334. The difference, US\$ 34 million, is once again an order of magnitude more than our resource requirement.

Finally, if both GDP and the relative education budget stop growing, then there is still the demographic impact on education spending mentioned in chapter 4, where it was recommended to make use of the historically unique window of opportunity of a decreasing school population. As the number of annual newborns has halved between 1990 and 2008, this frees up substantial resources, even if much of the money is needed for improving the quality of regular education and for increasing enrolment rates in secondary and tertiary education. Moreover, as noted earlier, retraining unemployed primary school teachers to become ECD professionals is a good way to make ends meet.

On top of these arguments comes the well-known fact that ECD pays itself back more than once. Some returns take time to materialize, others, such as enhanced efficiency in initial education, come quick. Lesser known are the spin-offs of ECD-provision as such. If the government creates a job for a young mother to run a small-scale, home-based ECD programme in a remote village, it may well be that hers is the only form of salary employment in that village. Her salary is not lost; it is an impulse in the local informal economy, and, just like micro-credit, it will see multiplier effects. Likewise, if a group of parents comes together to attend a parent education session, it may be the first time that these adults engage in any kind of structured learning and communication activity since school. The side-effect on social capital of such parenting sessions should not be underestimated.

VI. Conclusions and recommendations

Conclusions

1. While there is a strong case for investing in ECD in any country, worrisome trends in school wastage and perinatal mortality call for particularly urgent action in Armenia.
2. The 2006 Law on Preschool Education is a major step forward. It marks a turning point in ECD policy and underscores Armenia's determination to reinvigorate the system. Yet, legal inconsistencies persist. Children have the undeniable right to be enrolled, while the communities are tasked but not equipped to fulfil that right. Teachers have a legal right to receive twice the minimum salary, but their employers cannot afford to pay it. Many other standards are obsolete, jeopardizing the credibility of legislation.
3. The annual number of newborns in Armenia has halved between the early 1990s and 2008. As a result, Armenia will have a large working age population against a small education demanding population. Until 2020, when mass retirement will represent new financial challenges for public finance, there will be a historically unique window of opportunity to build a strong ECD system, probably supported by economic growth.
4. The full day-care programme of the traditional kindergarten is based on high standards in terms of human and other resources. In the ideal world, every child would have access. But it is precisely because of these high standards that it is unaffordable to scale it up to reach every child. Providing a sober and focused school preparation programme to all five year olds is less costly than providing full day-care to just 20% of the children.
5. Due to the low salaries, there is a high rate of turn-over among the staff. Time and money for professional development are scarce. Initial training seems weakly linked to practice.

Recommendations

1. Reconsider the architecture of roles and responsibilities regarding ECD. Either enable communities financially to provide ECD services in accordance with the Law of Preschool Education, or fund ECD directly from the state budget – as is the case for regular education and healthcare – through innovative mechanisms, thus retaining the scope for creativity, flexibility and entrepreneurship at local level.

2. Strengthen managerial capacity at the local level. Consider an experiment with the formation of ECD Districts in one of the smaller and predominantly rural Marzes, with a view to reach excluded groups by a diverse set of ECD modalities.
3. Redefine the core public tasks of kindergartens and ECD centers, and distinguish them from additional services that are essentially commercial. Holistic parenting education (integrating learning, health and protection) during the first years, followed by focused preparation for entry into school, should be the minimum that every family has access to.
4. Use the scenarios, not as policy recipes but as sources of inspiration.

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