

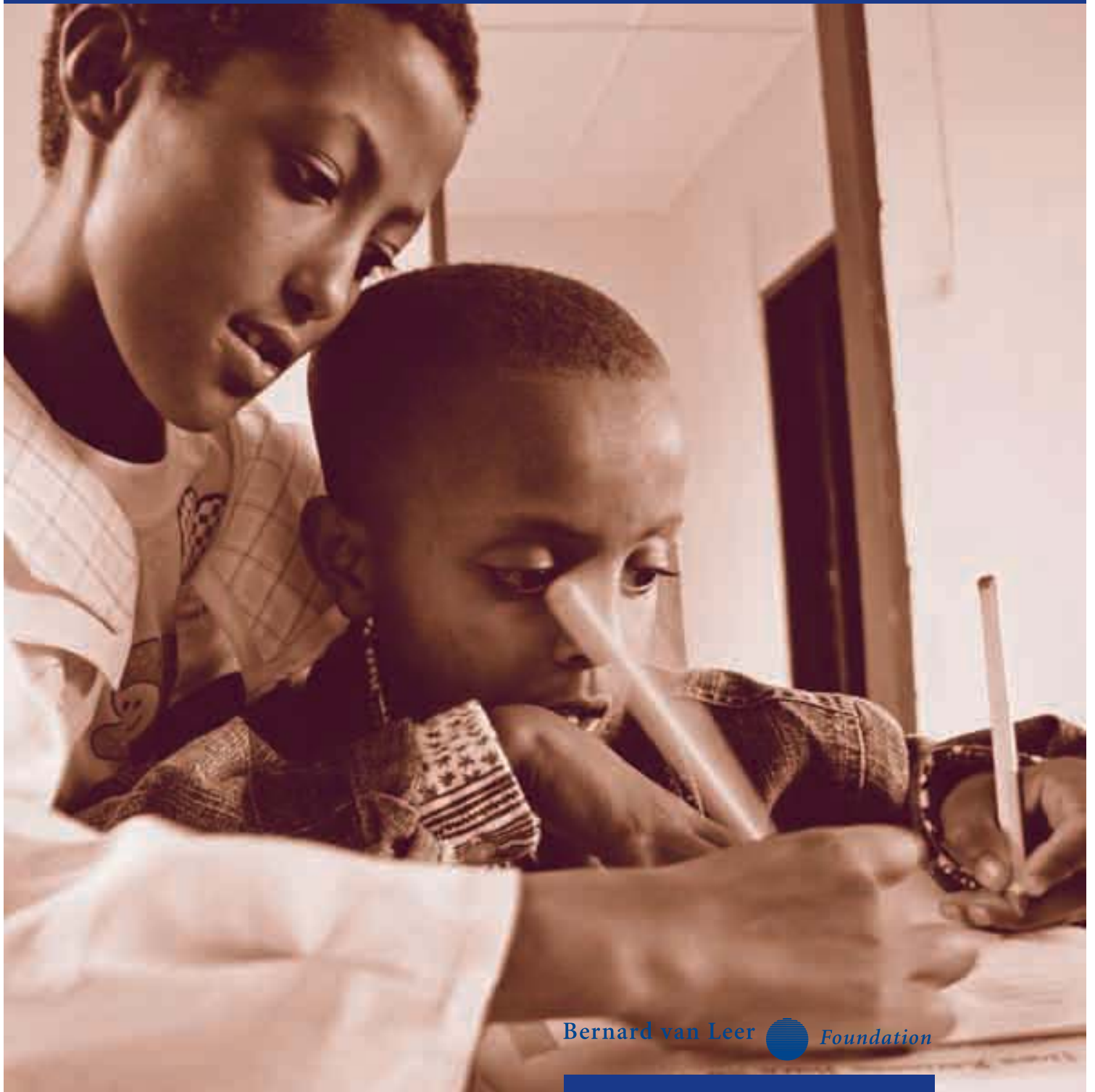
WORKING PAPERS IN

Early Childhood Development

46

*Expanding early childhood
care and education:
How much does it cost?*

By Jan van Ravens and Carlos Aggio



Cover: In a classroom in Egypt, a girl helps a young child to write. Photo: Elena Rue

Design: Valetti, vormgeving en communicatie, The Hague, The Netherlands

Editing and proofreading: Green Ink (www.greenink.co.uk)

WORKING PAPERS IN

Early Childhood Development

***Expanding early childhood
care and education:
How much does it cost?***

*A proposal for a methodology to
estimate the costs of early childhood
care and education at macro-level,
applied to the Arab States*

By Jan van Ravens and Carlos Aggio

March 2008

Copyright © 2008 by the Bernard van Leer Foundation, The Netherlands. The Bernard van Leer Foundation encourages fair use of this material. Proper citation is requested. This publication may not be resold for profit.

About the authors

Jan van Ravens is a senior policymaker in the areas of education and training, with a special interest in non-formal learning, including early childhood development and adult education. He is presently working as a consultant based in Rotterdam (the Netherlands), while operating internationally. Formerly he was a senior policy analyst in the Education for All Monitoring Team (2002–2005) and Head of International Affairs in the Netherlands Ministry of Education (1997–2002).

Carlos Aggio is a development economist working as a consultant based in Buenos Aires (Argentina). His main current research interests in the field of education are the monitoring of international education goals, their associated financial costs and the international financial aid required. Formerly, he was a member of the UNESCO Education for All Global Monitoring Team (2002–2004).

Citation

Van Ravens, J. and Aggio, C. (2008) Expanding early childhood care and education: How much does it cost? A proposal for a methodology to estimate the costs of early childhood care and education at macro-level, applied to the Arab States. Working Paper No. 46. The Hague, The Netherlands: Bernard van Leer Foundation.

ISSN 1383-7907

ISBN 978-90-6195-101-8

Contents

| | |
|--|-----|
| <i>Preface</i> | v |
| <i>Acronyms and abbreviations</i> | vii |
| <i>Summary and main findings</i> | ix |
| | |
| <i>Chapter 1: Introduction</i> | 1 |
| | |
| <i>Chapter 2: Methodological issues and the principle of interactivity</i> | 5 |
| | |
| <i>Chapter 3: Making the case for expanding ECCE in the Arab States</i> | 9 |
| | |
| <i>Chapter 4: Modalities of ECCE</i> | 13 |
| | |
| <i>Chapter 5: Estimating P: The unit costs</i> | 19 |
| | |
| <i>Chapter 6: Estimating Q: The numbers of children to be served</i> | 33 |
| | |
| <i>Chapter 7: Presentation and discussion of the outcomes</i> | 53 |
| | |
| <i>Chapter 8: Funding issues</i> | 59 |
| | |
| <i>References</i> | 65 |
| | |
| <i>Annex I. Users' guide for working with the cost estimation model</i> | 69 |
| | |
| <i>Annex II. Interpretation of the cost estimates. The case of Yemen</i> | 71 |

Dakar's 'Education for All' Goal One:

"Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children"

Preface

While the critical importance of early childhood care and education (ECCE) is undisputed, few developing countries are presently pursuing strong national policies to expand it. Thus, Goal One of the Education for All (EFA) agenda – “Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children” – is at risk of becoming a neglected area, even though it has the potential to contribute strongly to the achievement of other EFA goals. Many ECCE projects and programs exist throughout the developing world, and our knowledge about good practice and effective approaches is ever increasing, but the next step – translating this knowledge into action at national policy level – is a difficult one. A lack of transparency regarding the costs of national policies to expand ECCE seems to cause reluctance among governments and donors to invest in ECCE more substantially.

It is against this background that this publication has been written. It builds on a paper commissioned by the office of the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Cairo in early 2006. Using the Arab States as their domain, the authors

developed a model to estimate the costs of making early childhood services available to the most vulnerable and disadvantaged children. Inevitably, these estimations must rest on assumptions – translated into quantitative “parameters” – which are debatable. For this reason, readers of this publication are able to alter these parameters in the spreadsheet files on the CD-ROM that is included on the inside back cover, making this costing exercise an interactive process.

The original draft of this paper was discussed and commented on intensively, first by staff of the Bernard van Leer Foundation, and then by Wendy Janssens of the University of Amsterdam. The authors are very grateful for these comments as they enabled them to improve the text substantially. The authors also express their gratitude for the use of data of the UNESCO Institute of Statistics, which is responsible for the collection and dissemination of internationally comparable data in the UNESCO domains of education, science, culture and communication. It is hoped that this publication will spark the debate on national ECCE policy; that the model described will be developed further; and that it may eventually contribute to concrete advancement at country level.



Acronyms and abbreviations

| | |
|--------|---|
| ADEA | <i>Association for the Development of Education in Africa</i> |
| AGFUND | <i>Arab Gulf Programme for United Nations Development Organizations</i> |
| CSR | <i>corporate social responsibility</i> |
| DAC | <i>Development Assistance Committee (of the OECD)</i> |
| ECCE | <i>early childhood care and education</i> |
| ECD | <i>early childhood development</i> |
| EFA | <i>Education for All</i> |
| GDP | <i>Gross Domestic Product</i> |
| GER | <i>Gross Enrolment Ratio</i> |
| GMR | <i>Education for All Global Monitoring Report</i> |
| GNI | <i>Gross National Income</i> |
| GNP | <i>Gross National Product</i> |
| GPI | <i>Gender Parity Index</i> |
| HDI | <i>Human Development Index</i> |
| ISCED | <i>International Standard Classification of Education</i> |
| MDG | <i>Millennium Development Goal</i> |
| NER | <i>Net Enrolment Ratio</i> |
| NGO | <i>nongovernmental organisation</i> |
| ODA | <i>official development assistance</i> |
| OECD | <i>Organisation for Economic Cooperation and Development</i> |
| OIC | <i>Organization of Islamic Conferences</i> |
| OPEC | <i>Organization of the Petroleum Exporting Countries</i> |
| pc | <i>per capita (in relation to GDP or GNP)</i> |
| RPD | <i>regular program delivery</i> |
| TFR | <i>Total Fertility Rate</i> |
| UIS | <i>UNESCO Institute for Statistics</i> |
| UNDP | <i>United Nations Development Programme</i> |
| UNESCO | <i>United Nations Educational, Scientific and Cultural Organization</i> |
| UNICEF | <i>United Nations Children's Fund</i> |
| UPE | <i>universal primary education</i> |



Summary and main findings

The beneficial impact of early childhood care and education (ECCE) on efficiency in primary education and, more broadly, on several of the Millennium Development Goals (MDGs) is undisputed. Yet, ECCE enrolment in developing countries is generally low and predominantly private. The same applies for the Arab States, the region that we selected for this costing exercise. High levels of grade repetition and drop out in some of the countries studied call for urgent expansion of ECCE.

While Education for All (EFA) Goal One sets no numerical target, its text is very clear about the required focus of governments' policies: "Expanding and improving comprehensive early childhood care and education, *especially for the most vulnerable and disadvantaged children*" [emphasis added by the authors]. This focus on excluded groups makes it possible to develop an expansion scenario: assuming that present enrolment concerns mainly the more privileged children and will expand autonomously and driven by the market, children at the other end of the socio-economic spectrum must be addressed by targeted government policies. Beginning with undernourished children, and then reaching out for the children of illiterate parents as the second step, one could envisage that one day the two movements – market and policy driven – will meet so that universal enrolment becomes a reality. Concrete enrolment targets have been developed in this report for 2010 and 2015.

Establishing unit costs – the average cost per child per year – is a balancing act between the necessity of ensuring a minimum level of quality and the need to reach as many children as possible on a given budget. This report distinguishes two main modalities of ECCE provision:

- regular programme delivery, for the 'older' children in the early childhood age group;
- home visiting (understood here as providing expert support to groups of parents), mainly during the earliest ages.

For both modalities, normative models have been developed. These are based on assumptions and choices that the authors have made after consultation with experts and a literature review. However, these normative models can be altered by the reader if he or she disagrees with the choices of the authors. Thus, this report is not meant as a final statement but as the start of a dialogue.

Focusing on the poorer countries in the region on the grounds that the case for foreign assistance is strongest there, we found that the costs of achieving Goal One in the Arab States may be in the order of magnitude of US\$ 750 million annually until 2015. But this figure must be treated with utmost caution, since it excludes a number of countries for lack of data and it relies on a series of assumptions and choices made by the authors.

While this financial challenge seems immense, its affordability should be evaluated based on the following two considerations. The first is to assess ECCE *returns* on investments. Lower drop-out and grade repetition rates in primary education alone will pay back an important share (one estimate is 87%) of the costs of ECCE, while the societal and economic returns beyond the realm of education may be even larger than that. The second element is that countries

and donors be prepared to rethink and alter the *distribution* of financial resources over the various sectors and levels of the education system, in light of the principles of equity and social justice. The early years are critical for chances later in life, so the case for public investment in ECCE seems stronger than it is for the last stages of education, that many children never reach but receive a relatively large share of countries' and donors' budgets.

Chapter 1: Introduction

Goal One adopted by the Education for All World Education Forum in Dakar, Senegal, in April 2000, is as follows:

“Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children”

Education for All: Meeting our Collective Commitments (World Education Forum, 2000)

Rationale

The beneficial impact of early childhood care and education (ECCE) on several of the Millennium Development Goals (MDGs) is undisputed. Investments in ECCE pay for themselves by improving children’s performance later on in education, and in terms of a number of more broad social outcomes such as a good health, a stable family life, higher chances of employment, lower crime rates, and so on. Yet, the majority by far of public investment in basic education is committed to primary education. The same can be said about the international aid community which allocates most of its funding for basic education to primary education. Only a fraction of the international aid bill is dedicated to ECCE. More clarity about the cost

implications of meeting Education for All (EFA) Goal One seems a critical condition for raising the interest of developing countries and the international community in ECCE.

It is for this reason that we have developed a methodology for estimating the costs of EFA Goal One at macro-level. In need of a region to apply and test this methodology we selected the Arab States¹, for two main reasons. First, the Arab States is the region with the largest disparities between countries in terms of per capita income. Some of the richest and some of the poorest countries in the world are found here. Second, expansion of ECCE is urgently needed in the Arab States. In 2004, only 15.7% of the total number of eligible children in this region had access to pre-primary education, which is the lowest regional average after that of sub-Saharan Africa, where the figure stood at 12.4% (UNESCO Institute for Statistics, 2006).

Presently there is a high level of interest in ECCE in the Arab world. When the Minister of Education of Egypt hosted the Ministerial Review Meeting of the E-9 (the nine most populous developing countries) in 2003, ECCE was the main theme of this meeting (UNESCO, 2004a). The UN Convention for the Rights

¹ This study uses the UNESCO Global Monitoring Report (GMR) classification for the Arab States, which includes the following countries: Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Mauritania, Morocco, Occupied Palestinian Territory, Oman, Qatar, Saudi Arabia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates and Yemen. The United Nations Children’s Fund (UNICEF) uses the same grouping of countries but names it Middle East and North Africa (MENA). This name is also applied by the World Bank, but in their case it includes only 15 of the 20 countries, since it excludes the high income countries of the region.

of the Child has been embraced by all Arab States, and by all but one of the members of the Organization of the Islamic Conference (Arab Resource Collective, 1994; OIC, UNICEF, ISESCO, 2005). Sterling efforts to expand and improve ECCE are made by organizations such as AGFUND (the Arab Gulf Programme for United Nations Development Organizations) as well as individual countries. To mention just three: Egypt (World Bank, 2005) and Jordan (National Team for Early Childhood Development, 2000) have developed ambitious plans for their ECCE sectors, while Sudan aims at a 35% increase of enrolment by 2007 and a 75% increase by 2015, both compared to the situation in 2002 (Basheer, 2005).

Methodology

To estimate the costs of achieving a global or regional objective is extremely challenging, and it must be addressed with humility, flexibility and from a point of view of learning as Vandemoortele and Roy (2004) have formulated it in a paper on costing the MDGs. Readers will find in this report that the answer to the question ‘How much does Goal One cost?’ is very sensitive to assumptions that are made. Therefore we aim to be very clear on how exactly we arrived at those assumptions. If the reader disagrees with our assumptions, he or she can actually alter them. Our calculations are entered in an Excel spreadsheet on the CD-ROM that is included on the inside back cover of this Working Paper and can be accessed on the Bernard van Leer Foundation website (www.bernardvanleer.org). Our assumptions are given

as ‘parameters’ within the spreadsheet and these can easily be altered by the reader, which will immediately change the outcomes of the calculations, and hence the cost estimations. Annex I of this publication provides some instructions on how to use the spreadsheet.

Chapter 2 briefly addresses the methodology used in this paper, but methodology will also be a recurrent theme throughout this publication, precisely because of its strong influence on outcomes.

Age group

The official age range covered by the term early childhood is “the period below the age of 8 years” (UN Committee on the Rights of the Child, 2006). As primary school usually starts at the age of 6, there is an overlap of two years between early childhood and formal primary education; these two years are often seen as critical for successful attendance of school. Among many other institutions, the Bernard van Leer Foundation has adopted the definition used by the UN Committee on the Rights of the Child as the basis for their work.

While the arguments for this choice are very strong, there are pragmatic reasons for this study to deviate from the UN Convention and to focus on children up to 6 years of age. As said, the age of 6 is usually the demarcation between pre-primary and primary education that ministries of education apply. Likewise, national and international statistics are based on this distinction, following the so-called

ISCED classification (International Standard Classification of Education) which is also adopted at UN-level. Within the 0–5 age range, this study follows the distinction that is often made between the 0–2 age range and the 3–5 age range². This distinction appears for instance where different types of programs or services are being discussed.

Countries affected by conflict

As we all know, some of the countries in the Arab region are affected by conflict. This has severe implications for the people in these countries, for young children in particular, and also for the educational infrastructure. Where children need ECCE-services more than ever, they are often deprived from them. We must make clear at the outset that it is not possible in this report to do full justice to the very special needs of the children in the affected areas. This would require in-depth situation analysis, and this would have to take place in situ since flows of data and information are often disrupted.

Contextual diversity

Any analysis of ECCE in the Arab States must recognise the diversity of context that exists across the 20 countries in the region. In 2003, the regional population was about 272 million people. Almost 80% of these people live in six countries (Algeria, Egypt, Morocco, Saudi

Arabia, Sudan and Yemen). In contrast, there are three states where the population is below 1 million (Bahrain, Djibouti and Qatar). In the region as a whole, 46% of the population lives in rural areas. But in seven countries, mainly the high income oil producing countries, the urban population is larger than 85% (Bahrain, Kuwait, Lebanon, Libyan Arab Jamahiriya, Qatar, Saudi Arabia and the United Arab Emirates). At the other extreme, in Sudan and Yemen more than 60% of the population lives in rural areas. Chapter 6 provides more information on the countries. Clearly, achieving EFA Goal One is particularly challenging in those countries where access to ECCE services is presently very limited to begin with, where per capita gross domestic product (GDP) is low, and where the expansion of primary education claims most of the scarce resources. Inequalities within and between the countries will receive attention throughout the report, and especially in Chapter 8 on funding issues.

The structure of this report

Chapter 2 addresses methodological issues. Chapter 3 then makes the case for expanding ECCE in the Arab States by first reviewing briefly the evidence on the benefits of ECCE and then assessing present enrolment levels of ECCE in the region. Chapter 4 discusses the many ‘modalities’ in which ECCE is being delivered and it makes choices regarding how

² Children in the 0–2 age range are all those who are in the first, the second and the third years of their lives, i.e. those who are zero, one or two years old. The same logic is applied throughout this report to the 3–5 and 0–5 age ranges.

this complexity can be reduced. This paves the way for determining the unit cost in Chapter 5. The following chapter (Chapter 6) addresses the numbers of children to be served, focussing on how to prioritise vulnerable and disadvantaged children, as the text of EFA Goal One requires.

Chapter 7 then presents the outcomes of the cost estimation exercise using the aforementioned spreadsheet, setting the stage for Chapter 8 which asks how funding can be found for the estimated costs. The last chapter draws conclusions and makes recommendations.

Chapter 2: Methodological issues and the principle of interactivity

In essence, the estimation of costs is simple. It is the multiplication of two basic economic parameters: the price (P) and the quantity (Q). In practice, however, this exercise can become very complex.

The ' P ' in our case is the cost per child enrolled or unit cost. This is what it costs to give one child a set of early childhood development services. It is immediately clear that very different opinions can exist as to what this package of services must include, ideally or minimally, and for how many hours, days, weeks and years it must be provided. Quite such a high degree of ambiguity does not exist for primary education³, while even for the more diverse domain of adult literacy some relatively well accepted parameters exist that can be used as reference points⁴.

Similar things can be said about the ' Q '. The Dakar Framework of Action is precise about the number children that must go to primary school in 2015: all of them. It is equally precise about the required development of literacy rates: they must improve by 50%. Such precision has not been given to EFA Goal One, and this

is probably wise. A numerical target may create a certain rush to achieve it, which may result in the strategy of the 'lowest hanging fruit', prioritizing those children who are easiest to reach above those most in need. Indeed, the text of EFA Goal One urges us to prioritise the most vulnerable and disadvantaged children.

Keeping in mind the three principles of humility, flexibility and learning that Vandemoortele and Roy (2004) have put forward in relation to MDG costing, we have decided to adopt a fourth principle that characterises our methodology: interactivity. Wherever in the text we have to make a choice that affects the P or the Q , we not only attempt to be as transparent as possible regarding the arguments for that choice, but we also make it possible in most cases for the reader to actually alter the parameters in the spreadsheet, if he or she disagrees with that choice. The following example which affects P may clarify this.

The group size in ECCE is an important parameter underlying the cost estimations. Based on the literature we have assumed a group size of 20 children for the 3–5 age group.

³ There is, for instance, a fair amount of agreement that primary education should entail at least six years and roughly 1000 hours per year of quality teaching.

⁴ In the area of adult literacy the objective is relatively clear: the learner must eventually achieve literacy skills at a predefined level of mastery. There is some degree of consensus that this requires 400 hours of learning, although it is not difficult to find experts who may disagree with this figure. In the area of ECCE, however, such reference points hardly exist. No unambiguous indications come forward from the literature as to the number of hours per week, the number of weeks per year or the number of years that would suffice for a child to be healthy and prepared for school.

Clearly it would be better to have groups of, say, 10 children, so that much more attention can be given to each individual child. In fact, for children with special needs, small groups are crucial. But, generally speaking, on a given and limited budget, a group size of 10 would mean that we can reach only half of the children that we could reach if the group size were 20. And budgets are very likely to be limited, as Chapter 8 will show. So our assumed group size of 20 is a compromise between a normative approach based on professional standards and an assessment of what is financially and politically realistic. This stance is partly inspired by Myers, who warns about the “possible danger that the excellent becomes the enemy of the good” (Myers, 2006; see also Myers 2004). Interestingly, Jaramillo and Tietjen (2001) found that the least expensive pre-schools in Guinea performed better than the more expensive ones, underscoring the importance of contextual factors.

However, some readers of this report may disagree with us on this point. They may argue, for instance, that a firm statement must be made about the requirements that a good ECCE program must meet and what this would cost, without making political compromises at the outset. Since we wish to respect this and other positions, the reader is able to change the group size of 20 into any other value – either smaller or larger than 20 – that better reflects, in his or her view, the situation in a particular district,

country or the region as a whole. As explained, by a relatively simple action, the reader can manipulate the parameters and this will automatically affect the overall outcomes of this costing study.

Thus, Chapters 4 and 5 of this report generate a general and provisional model for the unit costs of ECCE, which is based on a number of parameters for which initial choices have been made by the authors. One could envisage that debate about and alterations of the parameters would eventually lead to a certain degree of consensus around an adjusted general model⁵.

Regarding the number of children that need to be served – the Q – there is a similar problem. If the text of the Goal does not contain a clear-cut numerical target, then how can we determine the number of children to be served at the various stages of the expansion process? This is not a technical issue; it is essentially a political issue, to be determined by governments after parliamentary debate and broad consultation.

We have tried to resolve this by holding on to the text of EFA Goal One, and more particularly the phrase “especially for the most vulnerable and disadvantaged children”. This adage has guided the development of projections and scenarios of ECCE expansion. As shown in Chapter 6, we first ‘identified’ the vulnerable and disadvantaged children in ways that are statistically manageable, and then developed an

⁵ This ‘open approach’ was applied previously in Van Ravens and Aggio (2005) where a similar exercise was developed for estimating the costs of EFA Goal 4 regarding literacy.

expansion scenario that countries may wish to follow, at their own pace, on their way to higher and eventually universal ECCE enrolment. The general idea is that ECCE will expand both from the top down and from the bottom up. The top-down movement implies that enrolment among children of the richer parents increases through a more or less autonomous or market driven process, while the bottom-up movement concerns the efforts of the government and non-profit providers to widen access to ECCE for vulnerable and disadvantaged children. It is hoped that for each of the Arab countries the day will come when the two movements shall meet somewhere in the middle, in which

case there is universal enrolment in ECCE, even though differences in duration and quality could still persist.

We hope that countries themselves will make use of the tools in this publication to develop their own expansion scenarios towards wider and eventually universal access to ECCE. In the absence of existing scenarios, we will base the cost estimations in this report on an assumed scenario that we think is reasonable, simply because it is technically impossible to carry out this exercise without making assumptions. But all assumptions – for *P* as well as *Q* – remain open to debate and alteration.



Chapter 3: Making the case for expanding ECCE in the Arab States

This chapter addresses the benefits of ECCE in general, based on evidence from the Arab States and beyond. It then looks at the extent to which children in the Arab States presently enjoy these benefits. It must be stressed that this concerns the region as a whole. More detailed country level information on enrolment is provided in Chapter 6.

The benefits of ECCE

As stated in the introduction: ECCE has an undisputed beneficial impact, both within the realm of education and beyond.

Within education, early learning strongly enhances success in further phases of education. In Jordan it was found that kindergarten attendance had a bigger influence on scores on an early years evaluation test than the place where children live (urban versus rural), gender and even family income (Hussein, 2005). In other words, ECCE has the potential, over time, to help to bridge gaps that exist between groups in a society.

Enhanced levels of school readiness should eventually translate into lower drop out rates and lower grade repetition rates. Indeed, in a study covering sub-Saharan Africa, Jaramillo and Mingat (2006) estimated that investments in ECCE would be offset by up to 87% as a result

of higher efficiency within primary education alone. This suggests that the full 100% of investments, and probably much more, will be recovered if the benefits that accrue at higher levels of education and beyond are taken into account.

Raising internal efficiency in primary education is certainly also an issue for the Arab States, even if it is not quite as urgent as in sub-Saharan Africa. In 2001/2002, 4.8% of the children in primary school in the Arab States repeated a grade, while this figure is below 1% in other regions, except South and West Asia (4.9%), Latin America and the Caribbean (5.6%) and sub-Saharan Africa (15.6%). Arab countries with grade repetition rates higher than 10% (2004 data) are Algeria, Djibouti, Lebanon, Mauritania and Morocco. The average drop out rate in the Arab States was 7.2% in 2001/2002. This is better than the 20.5% found in Latin America and the Caribbean, 35.1% in South and West Asia, and the 40.5% in sub-Saharan Africa, but in some of the individual Arab countries the situation is dramatic: 50.6% in Iraq (1998/1999), 51.3% in Mauritania (2001/2002) and 24.5% in Morocco (2001/2002). In Yemen 45% of the children who enrol in primary education do not complete it (Basheer, 2005). Four of the other countries in the region have drop out rates higher than 10%, and for three countries our source did not report the data⁶.

⁶ The data in this paragraph have been derived from (i) the fourth edition of the EFA Global Monitoring Report, Annex Tables 6 and 7 (UNESCO, 2005a), and (ii) the Global Education Digest 2006 of UIS, Table 4 (UNESCO Institute for Statistics, 2006)

As said, the benefits of ECCE also spill over to areas outside the realm of education. Evaluations of two large programs in the US revealed that every invested dollar pays itself back four or even seven times in terms of broad individual and social outcomes (ADEA Working Group on ECD, 2003). Studies in the developing world revealed similar outcomes, albeit not quite as spectacular. Still, van der Gaag and Tan (1998), investigating a number of projects in developing countries, found that the rates of return on ECCE programs are higher than those of interventions at other education levels and also higher than those of investment projects outside education.

The evidence of the benefits of ECCE and its capacity to ‘pay itself back’ was recently reviewed in the EFA Global Monitoring Report (UNESCO, 2006). This review underscores once again that ECCE contributes, more or less directly, to all of the other EFA goals, and to several of the eight MDGs, and that it is clearly worth the investment. However, some of ECCE’s benefits take a long time to materialise, and this limits the extent to which the gains can be used as political arguments to enhance investment in ECCE today. For more information on the benefits of ECCE we refer the reader to Masse and Barnett (2002), Young (2002), Njenga and Kabiru (2001), Ramey et al. (2000), Myers (1998), Wamahiu (1995) and Schweinhart, Barnes and Weikart (1993).

Present levels of ECCE enrolment in the Arab States

To what extent do children in the Arab States region generally enjoy the benefits that ECCE

brings? Table 3.1 provides a summary of the present situation in comparison with other regions of the world. A more precise assessment of the needs of children in the region at country level is given in Chapter 6.

Table 3.1 concerns pre-primary education which is defined by the UNESCO Institute for Statistics as follows: “Programmes at the initial stage of organised instruction, primarily designed to introduce very young children, aged at least 3 years, to a school-type environment and to provide a bridge between home and school. Various referred to as infant education, nursery education, pre-school education, kindergarten or early childhood education, such programs are the more formal component of ECCE” (UNESCO, 2006:351). It must be noted that this definition of pre-primary education is only one of several definitions. In Chapter 4 we shall also use the definition of a somewhat broader concept of ‘early childhood care and education’. The reason for using two definitions is entirely pragmatic: statistical data on pre-primary education are usually available for more countries than those on early childhood care and education, hence the use of the former in this particular case. It should also be noted that both definitions are restricted to the 3–5 age group; in this report, however, we shall also address the 0–5 age group.

In 2004, the Arab States as a region had 2.7 million children enrolled in pre-primary education. This figure represents an 11% increase compared with the enrolment level of 1999 (UNESCO Institute for Statistics, 2006: table 1) The latest comparable data at regional

level for enrolment ratios is presented in Table 3.1 from which it can be seen that only GERs⁷ are available. The Arab States' overall GER in pre-primary education in 2004 was 15.7%. This rate is the lowest except for sub-Saharan Africa where this figure stands at 12.4%. These figures show that currently the ECCE system in the region is only capable of capturing a small proportion of all the eligible children.

We do not see a clear correlation between wealth and enrolment in ECCE. For instance, with an average per capita Gross National Product (pcGNP) of US\$ 2240 in 2002, the Arab States are, as a whole, a richer region than East Asia and the Pacific (US\$ 960) where ECCE-enrolment is much higher⁸. Furthermore, Latin America and the Caribbean have an average pcGNP of US\$ 3280 (which is not much higher

Table 3.1: Total GERs in pre-primary education in the Arab States and other main EFA regions

| Region | GER (%) | | | | | |
|----------------------------------|---------|------|------|------|------|------|
| | 1999 | | | 2004 | | |
| | MF | F | GPI | MF | F | GPI |
| Arab States | 14.7 | 12.7 | 0.76 | 15.7 | 14.6 | 0.87 |
| Central and Eastern Europe | 48.8 | 48.0 | 0.97 | 57.5 | 55.9 | 0.95 |
| Central Asia | 22.5 | 21.5 | 0.92 | 26.9 | 26.2 | 0.95 |
| East Asia and the Pacific | 39.8 | 39.3 | 0.98 | 40.0 | 39.3 | 0.96 |
| Latin America and the Caribbean | 55.8 | 56.1 | 1.01 | 61.5 | 61.9 | 1.01 |
| North America and Western Europe | 75.7 | 75.1 | 0.98 | 78.5 | 77.7 | 0.98 |
| South and West Asia | 22.3 | 21.3 | 0.91 | 32.4 | 32.0 | 0.98 |
| Sub-Saharan Africa | 9.6 | 9.5 | 0.98 | 12.4 | 12.3 | 0.98 |

Source: UNESCO Institute for Statistics (2006), online statistical database.

Abbreviations: GER, Gross Enrolment Ratio; MF, Male + Female; F, Female; GPI, Gender Parity Index.

⁷ GER stands for Gross Enrolment Ratio, which is the number of children of any age that are enrolled, as a percentage of the relevant age group. A better measure is the NER or Net Enrolment Ratio, with only the enrolled children of the proper age in the numerator. We use NER whenever possible, but where this is unavailable we have had to use the GER.

⁸ The data on pcGNP are derived from Table 1 of the fourth edition of the EFA Global Monitoring Report (UNESCO, 2005a).

than that of the Arab region) compared to an average GER of 61%, which is more than three times that of the Arab region. Remarkably, North America and Western Europe, often seen as the benchmark, have a GER of 78%, which may be the highest value of all regions but is by no means close to universal enrolment.

The gender balance – indicated by the Gender Parity Index (GPI), i.e. girls' enrolment as a ratio to boys' enrolment – shows that there is a gender gap in favour of boys, with GPI standing at 0.87. Looking at the other regions, it can be said that a relatively good gender balance (compared to primary education) is a typical ECCE feature all over the world, which can partly be explained by the fact that children at ECCE age are initially too young to work, and partly by the fact that children from poorer backgrounds – who run a higher risk of being put to work – tend to be excluded from ECCE.

According to the UNESCO Institute for Statistics (2006), two thirds of the pre-primary pupils of the region are enrolled in private institutions. Unfortunately, there is no information for the other regions and therefore it is not possible to make comparisons. It must be noted that 'private' provision includes not only the 'for-profit' providers, but also non-governmental

organisations (NGOs) and religious organisations. The latter fulfil an especially important function in the Arab States.

The low enrolment ratios combined with high private provision reflect the underdevelopment of public provision. Its expansion is urgently needed if considerable progress towards EFA Goal One is to be achieved, particularly to reach out to the most vulnerable and disadvantaged children. However, the rate of progress in the last five years has been modest. A simple projection of the recent trend (1.3% average annual growth rate) reflects that the region as a whole would need 50 years to reach a GER of 50%.

In conclusion it can be said that children in the Arab States, in general, are not benefiting from ECCE to a degree that would be acceptable in light of the important advantages of it. The region as a whole may be generating enough wealth to be able to accelerate progress to EFA Goal One, but, as shown in Chapter 8, various individual countries may not. Presently ECCE is nearly non-existent in some countries, while in one case there is even an alarming decrease of enrolment, as shown in Chapter 6. High drop-out rates in primary education in some of the countries indicate that investment in ECCE is very urgently needed and will largely pay itself back.

Chapter 4: Modalities of ECCE

Before we can even begin to estimate unit costs of ECCE, we need to ask what it actually is, and how the many modalities of ECCE can be ‘modelled’ to a more limited and more manageable number of variants. This is the goal of this chapter.

What is ECCE?

As stated in the previous chapter, several different definitions of ECCE exist. While in the previous chapter we needed to stick to the more restrictive definition of pre-primary education for statistical reasons, we now prefer the broader concept of ECCE. The glossary of the 2006 edition of the EFA Global Monitoring Report (UNESCO, 2005a) defines ECCE as follows:

“Programmes that, in addition to providing children with care, offer a structured and purposeful set of learning activities either in a formal institution (pre-primary or ISCED 0⁹) or as part of a non-formal child development programme. ECCE programmes are normally designed for children from age 3 and include organized learning activities that constitute, on average, the equivalent of at least 2 hours per day and 100 days per year.”

In this definition ECCE encompasses pre-primary education but also includes “non-formal child development programmes” as well. Once again

we note that while the above definition is restricted to the 3–5 age group, this report also addresses the 0–2 age group.

Under this general heading sits a rich programmatic diversity. Going from more formalised to less formalised, and far from claiming to be exhaustive or mutually exclusive, we can distinguish four main modalities:

- **Formal pre-school.** This modality is usually designed to specifically prepare children for their entry into primary education. It has many of the characteristics of regular education, and can actually be situated within primary schools.
- **Centres.** These can be referred to as kindergarten, day care centre, crèches, nurseries, and so on, partly depending on age. Centres can stand on their own or can be linked with community centres, schools, or with the organisations where parents work.
- **Home-based facilities.** Different kinds of arrangements that groups of families and/or community leaders have organised, with or without external support.
- **Home visiting.** This modality does not directly reach out for the children themselves but assists parents and community leaders in their educational efforts. Strictly speaking, terms such as parent-support, coaching or perhaps counselling may also capture these activities, but we adhere to the more

⁹ ISCED-0 is a statistical term. It stands for International System for the Classification of Education, and level zero concerns (formal) pre-primary education. We shall not use this rather technical term further in this report.

commonly used “home visiting”. It may include the provision of materials or even a toolkit. Home visits by an ECCE expert are the usual vehicle, but media can play a role too. Home visiting can be successfully combined with the previous modality, with experts supporting groups or networks of parents and community leaders.

Within each of these four modalities a large variety of approaches exist, based on educational and pedagogical paradigms, on visions on childhood, on ideas about the relationship between the programme, its stakeholders and its environment, and so on. Table 4.1 illustrates the genuinely complex nature of the ECCE goal, compared to the Goal of Universal Primary Education (UPE).

Table 4.1. Comparing UPE and ECCE for costing purposes

| | UPE | ECCE |
|----------------------------------|--|--|
| Target | All primary school age population into school | Expansion, with a focus on vulnerable and disadvantaged children. Different interpretations of ‘expansion’: more children enrolled, more time spent on programmes per year, more years, etc. |
| Delivery | Predominantly formal | A range of modalities from sparsely supported home-based to formal pre-school |
| Staff required | Professionals | Professionals, paraprofessionals, parents, siblings, nannies, babysitters. However, untrained carers may gradually reach higher levels of professionalism |
| Focus of the intervention | Children | Children and/or parents (e.g. mothers attending literacy programmes that address child upbringing) |
| Entry age | Officially at age 6 in most countries. In practice, children may enter one or more years later, and occasionally earlier | At the earliest, ECCE starts soon after birth. At the latest it starts one year before entry in primary school |
| Frequency and duration | Usually at least 5 days a week, during a regular number months per year, and usually lasting for six years | Very diverse: from once a week to 5 days a week, from just a few hours to a full day, etc. The duration also varies widely. |
| Number of children served | Fairly well agreed definition | Different definitions. The use of full-time equivalent would be desirable. |
| Unit costs | Rough estimates available from a broad body of research | Estimates are scarce. The literature on ECCE is strong when it comes to impact (the so-called tracer studies), but less strong on financial issues |

Reducing the complexity

It is clear that a cost estimation at regional and national level cannot possibly do full justice to all of these variants. It would lead to a miscellany of cost variants and would not enhance the clarity of the outcomes. So how can we reduce the complexity? We faced a similar problem when estimating the global costs of EFA Goal Four regarding adult literacy (Van Ravens and Aggio, 2005), an area in which a similar diversity of paradigms exists. We then arrived at the following solution, which, in essence, we propose to adapt to the specific case of ECCE:

- Despite the enormous diversity in ECCE, there are a number of basic characteristics that most – not all – programmes have in common:
 - There is usually a group of learners (in this case children) of a certain size.
 - There is usually a person involved called a teacher, carer, educator, facilitator or similar. This person has ideally received a certain amount of pre-service and/or in-service training.
 - There is usually an environment where the interaction between learner and teacher takes place and that ideally meets certain standards. The same goes for inventory and learning materials.
 - There is usually a certain time frame within which the interaction takes place: a certain number of hours per day, a number of days per of week, a number of weeks per year, and a number of years.
- There is usually a management and support structure of some sort, leading to overhead costs.
- For all these parameters it is possible to make assumptions, partly based on empirical observations, partly based on normative notions derived from the judgment of experts.
- Thus, we can arrive at a framework – we will do this in the next chapter – that can be seen as representative for the large majority of programs, even if they differ in pedagogical and other respects. In other words, we can reduce the complexity of the domain that we are addressing.
- Exceptional ECCE-programs and approaches that require, for instance, very small groups or very special preparation for the teacher will thus remain out of the scope of this study¹⁰. The argument is that such programs, beneficial as they may be, are too expensive to make a substantial contribution to a significant expansion of ECCE for children. This implies by no means that they should cease to exist. Such programs may play an important role both as ‘laboratories’, where innovations can mature, to be scaled up later, and, of course, for children with special needs requiring a higher degree of attention.

¹⁰ As indicated earlier, however, the reader can manipulate the parameters in the spreadsheet. The cost implications of having smaller groups or higher training costs can thus be observed.

Thus, we shall henceforth speak of regular program delivery (RPD), abstracting from the concrete forms and labels it may have such as formal pre-school, centre, etc. This does not mean that these forms and labels do not matter. In fact, one of the present debates in ECCE is about the possibly higher cost-effectiveness of centres compared to formal pre-school (Mingat, 2006)¹¹. But in our approach, we ‘enforce’ a certain degree of cost-effectiveness by setting the parameters, not by discriminating at the outset between forms and labels. In practice it may (or may not) appear that centres meet these parameters more easily than formal pre-schools, but this remains to be seen, and it would not influence the outcomes of the costing study.

Following the distinction between the 0–2 and 3–5 age groups (Chapter 1), and referring to the definitions of pre-primary education (Chapter 3) and of ECCE (at the beginning of this chapter), we will further assume that RPD concerns the 3–5 age group rather than the 0–2 age group. However, the precise age group that is being served by programmes differs by country. Within the Arab States, the whole 3–5 group is eligible for (formal) pre-primary education in Bahrain, Lebanon, Mauritania, Qatar, Saudi Arabia, Syrian Arab Republic, Tunisia and Yemen, but only 4 and 5 year olds are eligible in the remaining countries: Algeria, Djibouti, Egypt, Iraq, Jordan, Kuwait, Libyan Arab Jamahiriya, Morocco, Occupied

Palestinian Territory, Oman, Sudan and United Arab Emirates.

There are two ECCE modalities that are not covered by RPD and that are important enough to discuss them in more detail: home visiting and nurseries.

Home visiting

While a clear definition of home visiting seems to be lacking, we treat it in this paper as a modality of ECCE whereby a professional (the visitor) visits parents or groups of parents with young children, and supports them in various ways in the process of raising these children. It usually concerns the 0–2 age group, and only in exceptional cases the 3–5 age group.

The logistics of home visiting are different from those of RPD. The number of parents or community leaders that a visitor can address in one session is smaller than the ideal number of children in one group. But at the same time the frequency of the sessions is much lower (e.g. twice a month over six months) so that one visitor can address large numbers of parents in total. And since parents usually have several children, the ‘span of control’ (the total number of children that are indirectly reached) of a visitor is much larger than that of one single teacher or carer. This makes this ECCE modality potentially very cost-effective. The extent to which this potential cost-effectiveness comes

¹¹ *Mingat demonstrates that centres are less expensive than pre-schools from a government perspective, because parents tend to cover a part of the costs by paying fees. This, however, does not mean that centres are genuinely cheaper; it may simply mean that parents pay more. And many parents may be unable to pay the fees, as Jaramillo and Tietjen (2001) signal.*

to fruition depends on a variety of factors. On the positive side, there is for instance the fact that the beneficial impact of the interventions usually goes beyond the children¹². On the negative side, there are indications that this impact is slow-working and tends to materialise only in the medium term. All things considered, however, there seem to be sufficient arguments to give home visiting its own place in this costing exercise, distinct from and in addition to RPD.

Nurseries

Nurseries (and crèches) are usually meant for infants and toddlers, i.e. the 0–2 age bracket, but in terms of the logistics they would resemble RPD more than home visiting: there is a site where children are brought, there are materials, there is a carer, etc. (for obvious reasons nurseries require a different child/carer ratio compared to RPD for the 3–5 age group).

There are two reasons that make it questionable whether nurseries should receive separate treatment in a study about the expansion of ECCE services towards a large scale and on limited budgets.

First, nurseries have relatively high unit costs. In Jordan, for instance, there is one carer for every five children (National Team for Early

Childhood Development, 2000), which makes this service rather expensive. Indeed, only 1.57% of the relevant age group in Jordan is cared for in a nursery, and services are concentrated in and around Amman (49% within the capital, and 59% in the central region around the capital). Though we have not found such precise figures for other Arab countries¹³, we get a strong sense from the literature that the situation is not very different elsewhere in the region or in the developing world more broadly. Even rich countries such as EU-member states do not have the ambition to universalise nurseries. Their targets for 2010 are 90% enrolment for 3–5 year olds and a mere 33% coverage for the 0–2 age group.

Second, there are concerns about the desirability of certain services for the 0–2 age group, and more precisely about cognitive and social development during later childhood of children who are (too) frequently cared for in nurseries (EFA Monitoring Team, 2005). Indeed, the main argument for parents taking their children to nurseries seems not to be pedagogical but rather practical, in that it frees them up to work and generate income.

In summary, the costs of substantially expanding access to nurseries may prove to be unimaginable, and the desirability of it questionable. One

¹² The second edition of the EFA Global Monitoring Report, which had gender as its theme, has described a number of such synergetic arrangements (UNESCO, 2003:183). The fifth edition has ECCE as its theme and also addresses schemes to support parents (www.efareport.unesco.org).

¹³ The UNESCO Institute for Statistics only collects and reports data for ECCE services with an entrance age of 3 or higher (UNESCO Institute for Statistics, 2006, Table 1)

could take the stance that generally when parents generate a demand for nursery services it is usually driven by economic motives so that they could be expected to finance these services themselves, possibly together with other stakeholders. Ms Choi, UNESCO's ECCE expert, recommends a partnership approach mobilising the other ministries that are usually involved (UNESCO, 2004a:20)¹⁴, but also educational activities such as female literacy classes and community learning programmes, to which we

would add employers who may be encouraged to open up more facilities for their personnel¹⁵.

Since this study focuses on the substantial expansion of ECCE for vulnerable and disadvantaged children – clearly a public responsibility – nurseries do not seem to fit into the picture. We therefore propose (i) to address the 0–2 age group under the heading of home visiting only, and (ii) to address the 3–5 age group under the heading of RPD.

¹⁴ In Sudan, for instance, five ministries are involved (Basheer, 2005), while Abd-El-Jaheel (2005) identified 21 organisations in Yemen that are involved, including six ministries.

¹⁵ This is also an element of Jordan's strategy (National Team for Early Childhood Development, 2000:14)

Chapter 5: Estimating *P*: The unit costs

In this chapter we first estimate the unit cost (i.e. average costs per child) of RPD and then those of home visiting. Both will be expressed in terms of pcGNP, but in the last section of this chapter they will be translated into concrete US\$ for each of the countries.

Methodological problems regarding the estimation of unit costs of RPD

For the estimation of the unit costs of RPD we again build on our experience with an earlier and comparable exercise that we did for EFA Goal Four on adult literacy (van Ravens and Aggio, 2005). There are similarities between EFA Goals One and Four, although there are also important differences that we shall take into account.

The two goals have in common that the observed unit costs of existing programs vary considerably. There is just too much variation to simply pick one example and use it as a standard. In the case of literacy, therefore, we pursued a two-tiered approach. First we estimated the unit costs theoretically rather than empirically, using a normative model. One of the characteristics of this model was that it was contextualised, in that unit costs in a certain country depended, for reasons explained later, on that country's pcGNP, and on teacher salaries that are typical for the region. We then tested the normative model by comparing its outcomes, for as many countries as possible, with observed

or empirical unit costs. It appeared that the model worked. Most of the observed unit costs were of the same order of magnitude as the model's predictions (there was no clear tendency towards overestimation or underestimation), while those literacy programmes that were significantly more expensive or significantly less expensive clearly belonged to different program categories, e.g. very cheap programmes usually rely on volunteering, while the expensive ones typically included life skills components or seemed to have undesirably large overheads.

We have tailored the normative model in order to make it fit the specific characteristics of ECCE. However, when we tried to make the second step – comparison with observed programmes – we encountered a problem as the variation in unit costs is even larger than it is in the case of literacy. For instance, the UNESCO report on ECCE in E-9 countries presents unit costs for four of the E-9 countries and two other countries (UNESCO, 2004a). While the six countries do not differ very greatly in terms of development status, the unit costs ranged from US\$ 46 to US\$ 1222, a difference which is by no means explained by variation in pcGNP. For these six countries, the report also allows a comparison with unit costs in primary education, where variation is less marked and better explained by variation in income pcGDP. The comparison revealed that unit costs in primary education are higher than in ECCE in all but one of the six countries, but in some

cases the differences between the two is much more pronounced than in other cases. The EFA Monitoring Team (2005) found a similar degree of variation. A broader search for observed unit costs, with a focus on low income countries, revealed somewhat more consistency (Mingat et al., 2006; Issa, 2006; Hyde, 2006; UNESCO, 2005b; Myers, 1998; The Consultative Group Secretariat, 1993). Unit cost in poor countries in Africa and Asia tend to have an order of magnitude of US\$ 25 to US\$ 50, although lower unit costs are also found, the lowest being US\$ 10 in the case of a large programme in India. Within the Arab States, unit costs in Sudan are in the order of US\$ 26¹⁶. Abd-El-Jaleel (2005) reports that full fees in Yemen are roughly between US\$ 50 and US\$ 100, but clearly few parents can actually afford these fees given the low level of enrolment in this country.

Three main causes of the variation in unit costs are: (i) strong variation in duration, (ii) volunteering, and (iii) the incidence of very expensive, usually small scale programs.

- The number of hours that children spend per year in ECCE varies strongly. As noted earlier, the UNESCO Institute of Statistics only reports on programmes of 2 hours or more per day and of 100 or more days per year. Thus, the bottom line for statistical reporting is 200 hours, but programs of even less hours do also exist. At the other end of the spectrum we find formal pre-school, where the annual number of hours may approach that of primary education.

In other words, even programs of roughly equal quality (i.e. with equally trained and paid teachers, with equal group sizes, with equal equipment) may still differ by a factor 4 when it comes to unit costs.

- Since teacher salaries are usually the main cost component in education, cutting these costs strongly reduces the unit costs. This is the case when parents and community leaders act as teachers on a voluntary basis, or against a small financial or in kind compensation. Similar economies may occur when religious organisations act as providers. Later in this chapter, under the heading of visitors, we shall discuss the option of having parents and community leaders acting as well-prepared but low-paid or unpaid teachers.
- In some countries, the coverage of ECCE is very limited, and often restricted to elite children in the capital. On such a small scale it is not difficult to generate enough resources to pay teachers well and keep the groups small, which explains the incidence of high unit costs. Such situations are regularly criticised in the literature, and they must be ended when countries wish to scale up ECCE provision substantially.

A normative model for estimating the costs of RPD

Given the variation and indeed the bias within observed unit costs, we need to rely on the normative model that we developed and tested

¹⁶ See Basheer (2005, table 6.2). We divided the total costs by the total number of enrolled children to obtain a rough estimate.

for EFA Goal Four and to adapt it to Goal One¹⁷. We do this through the following steps (a–k).

- a** Teacher salaries are usually the core element of cost structures in education. They depend on pcGDP: a teacher in a richer country will need a higher salary to afford a certain basket of consumer goods than a teacher in a poorer country, while the national income of that richer country would indeed allow for higher teacher salaries. Controlling for pcGDP is particularly important in the case of the Arab States given the strong variation between the countries in terms of national income.
- b** Rules of thumb have been calculated regarding the salaries of primary school teachers in various regions. Here we refer to table 4.10 in the third edition of the EFA Global Monitoring Report (UNESCO, 2004b). For example, in Asia teachers earn 2.9 times the pcGDP, as distinct from Africa where the factor is 4.4. In the Arab States, this factor stood at 2.8 in 1985 and at 3.3 more recently, so we propose to use a factor of 3 as a rough but defensible assumption. If the reader prefers a higher or lower value, she or he can enter that value in the spreadsheet, and this goes for all of the following assumptions underlying this normative model.
- c** We then need to decide whether or not we assume the same salaries for ECCE teachers

as we do for primary school teachers. Mingat (2006) found that pre-school teachers in four developing countries earned on average 81% of what primary school teachers earn. As a more general statement one can say: the higher the education level, the better the teachers are paid, with the university professor standing at the top of the income hierarchy. This is usually explained or justified by the fact that content matter gets more complex at higher education levels, so that it requires more study and talents to master the content. Indeed, in terms of educational content, ECCE does not seem to require extensive preparation. But when it comes to the pedagogical process, ECCE may demand more from the teacher than higher forms of education, given the delicacy of early childhood development. Dedicated and talented ECCE teachers are crucial since the child is in a phase of potentially rapid development, for better or for worse. We have thus assumed the same salary levels for ECCE teachers as for primary teachers. The argument for doing this is further supported by the fact that salaries, even in primary education, in developing countries are generally considered to be insufficient and are often seen as the main cause of absenteeism (UNESCO, 2004b).

¹⁷ Other models exist as well. An example is the approach chosen by the World Bank for its large ECCE project in Egypt (World Bank, 2005). This approach is not based on unit costs but rather on main project components such as constructing or repairing buildings, training teachers, etc. This approach is necessary for the roll-out of an operational plan or programme, but less suitable for a macro-level cost estimation. The ECD Calculator (www.worldbank.org) represents another model. In this case the main function is to calculate the economic benefits.

- d** The total number of hours that a full time teacher works per year is assumed to be 1800¹⁸, of which 1600 is effective teaching time or contact hours, the rest being preparation time (van Ravens and Aggio, 2005). Of course, not every teacher actually works full time and local circumstances may strongly determine the rhythm of daily life and hence the chronology of programme delivery, e.g. agricultural communities will have a different 'calendar' than urban people, nomadic groups, or fisherfolk. So in practice we may find in one place teachers who run parallel classes during a part of the year, and work elsewhere during the rest of the time, and in another place teachers with a pattern that resembles that of regular education. But our approach is such that it abstracts from such differences.
- e** Given 1600 hours of contact time, a teacher can theoretically run two ECCE classes of 800 hours each in one year. Once again, this does not imply that all ECCE courses have exactly 800 hours per year. Many may only have half this amount, some perhaps just one fourth or less (200 hours per year is the threshold for statistical reporting). Within the Arab States, the number of yearly hours varies from 195 in Iraq (which is clearly an outlier) to 1152 in the Syrian Arab Republic, but more generally speaking, there is a tendency towards 800 yearly hours (Abd-El-Jaleel, 2005). Thus, we have used 800 hours as a standard in our calculations.
- f** Given the fact that the theoretical annual salary of a teacher in the Arab States is $3 \times \text{pcGDP}$ (see point b), and assuming that a teacher theoretically delivers two programs of 800 hours each per year (see point e), the salary component of an 800 hour programme would cost $(3 \times \text{pcGNP})/2$. To find out how much this is per child, we need to know the normative group size. As discussed as an example in Chapter 1, and based on the general impression that we get from the literature, we have set this parameter at 20 (see for example ADEA Working Group on Early Childhood Development, 2003). Although Bennet (2004) suggests a group size of 15 and although the present pupil/teacher ratios¹⁹ in the Arab region are generally around that size or even lower (UNESCO Institute for Statistics, 2006), we think that it will be difficult enough to maintain a group size of 20 in a scenario of (hopefully) rapid expansion of ECCE. The lesson from fast growth in primary education in some African countries is that it can easily inflate class size. The situation in Yemen may illustrate this risk. Abd-El-Jaleel (2005) reports the numbers of children that are enrolled in ECCE, as well as the manpower, for each of Yemen's Governorates. If we divide the former by the

¹⁸ The assumption of a working year of 1800 hours is again a rough estimated average. It is the product of 40 hours (per week) multiplied by 45 weeks (per year). In practice, only the professionals in the richer countries may have the luxury of several weeks of vacation per year. In poorer countries, it is absenteeism rather than vacation that limits the effective number of hours that people work on a yearly basis.

¹⁹ It must be noted that pupil/teacher ratios are not quite the same as the group size.

- latter to obtain a rough indication of group size, we find ratios varying from 1:4 to 1:24, with an average of 1:11 (Abd-El-Jaleel, 2005). But at the same time the overall level of enrolment is extremely low in Yemen. Thus it is very questionable whether these relatively favourable ratios can be maintained against improved enrolment levels.
- g** If we combine an assumed group size of 20 with the formula found in point f above, then we can say that the costs of the salary component of an 800 hour programme *per child* are equal to $[(3 \times \text{pcGDP}) / 2] / 20$. The last step is to determine the non-salary component.
- h** First, we assume that this component also depends on pcGDP. It consists partly of overhead costs, taking the form of salaries of managers and others who should be hired locally²⁰. Partly, it takes the form of buildings that need to be built or repaired by local construction workers using locally produced materials and so on. Integrating a cost component that does not depend on pcGNP is only justified when lots of goods must be imported, such as machinery or vehicles. We assume that learning materials are not imported even if this is presently the case because it would be too expensive when scaling up an ECCE system.
- i** In the case of literacy training, we assumed that teachers' salaries make up 70% of all costs (van Ravens and Aggio, 2005). This was partly inspired by the situation in primary education. Although the teacher component in that sector is usually around 85% to 90% of total costs in developing countries this is generally considered to be too high and to leave too little room for materials, ongoing or in-service training, maintenance of the building, etc. (UNESCO, 2004b). The regional average for North America and Western Europe stands at 66.8%. In the case of ECCE there are arguments to choose an even lower value. First because nutrition, medication, materials and toys require resources²¹. Second because in-service training is also part of the overhead and this may be of special importance, especially for those countries that have a small ECCE sector and wish to scale it up relatively quickly. This aspect deserves special attention.
- j** Normally teacher training consists of three or four years of full time pre-service study, i.e. 'off-the-job training'. Countries that have had a relatively large ECCE sector for many years and wish to expand it slowly may choose to rely on the existing infrastructure for teacher training. The intake for these courses may need to increase somewhat in

²⁰ It may sometimes be the case that foreign staff are involved for technical assistance, management and perhaps even teaching or counselling. In such cases we take a normative position by saying that at the end of the day this is undesirable and would lead to high costs. Experimentation and small scale initiatives may sometimes thrive on foreign inputs, but when scaling up, sustaining what has been achieved is only possible by relying largely on local resources.

²¹ Medication can enhance school success at relatively low costs, apart from having an obvious value of its own (see for example *Public Health at a Glance – a section of the World Bank website – on the Integrated Management of Childhood Illness, IMCI*). School meals are increasingly seen as a 'quick win' instrument that not only enhances childrens' health, but also stimulates school and ECCE attendance (Sachs, 2005).

periods of gradual expansion, but it will not necessarily lead to a strong disruption in the funding of teacher training. In other words, the extra investment in the preparation of ECCE teachers may almost remain unnoticed in these countries. By contrast, countries with a smaller ECCE sector and a stronger ambition to make it grow cannot entirely rely on the existing infrastructure. Full time off-the-job training is very costly and there is the practical problem that even if the intake of regular teacher training increases quickly, it will take about three to five years before the first of this new generation of teachers graduate. With only nine years to go until 2015, countries may not wish to wait for that. Therefore, there is a growing consensus, regarding both primary education and ECCE, that teachers are best trained on-the-job, with just a minimum amount of preparation ex ante (UNESCO, 2004b; Jaramillo and Tietjen, 2001; Myers, 1998). Strong commitment seems to be more important than lengthy pre-service training for teachers at this level and so, clearly, parents and community leaders are excellent candidates for this role. Thus, under the assumption that the preparation of large numbers of new ECCE teachers (in a context of rapid expansion) will predominantly take place on-the-job, we need to build in a training cost component into the unit cost, since the new teachers will take time before becoming fully productive, while the more experienced teachers need to dedicate some of their time to coaching the newcomers.

k We thus assume that the non-salary component will be 40% of the unit cost in times of rapid expansion, leaving 60% for the salary-component. We can now complete the unit cost formula: $[(3 \times \text{pcGNP}) / 2] / 20 \times (100/60)$. This equals $0.125 \times \text{pcGNP}$, or 12.5% of pcGNP. To put this into perspective, one could say that this 12.5% of pcGNP equals about 4% of a primary school teacher's salary in the same country. For poor families it can easily rise to a much more substantial share of their annual income.

For an overview of all the core parameters see Table 5.1. The abbreviations in brackets appear in the formula below.

The combination of these parameters results in the unit cost (expressed as percentage of pcGNP) according to the following formula:

$$\text{Annual RPD Unit Cost} = \frac{(\text{PSTAS} \times \text{ECCE adjust})}{\text{NP}} * \frac{1}{\text{SC/TC}} * \frac{1}{\text{GS}}$$

As said earlier, the opportunities for testing this formula by comparing them with empirical unit costs are limited because we have only a few observations of unit costs at our disposal and these vary enormously. However, there is one important and robust observation by Mingat (2006), who found that the average unit costs in sub-Saharan Africa are 17% of countries' pcGNP. Knowing that teacher salaries in sub-Saharan Africa are around $5 \times \text{pcGNP}$ (against $3 \times \text{pcGNP}$ in the Arab States) we can recalculate our

Table 5.1. Core cost parameters for RPD in ECCE

| | |
|--|---------------------------------|
| Primary school teachers' annual salary (PSTAS) | 3 × pcGNP for the region |
| ECCE teachers salary as % of primary school salary | 100% |
| Total working hours per year | 1800 |
| Total effective teaching time | 1600 |
| Number of programmes (800 hours) per teacher per year (NP) | 2 |
| % of salary on total cost (SC/TC) | 60% |
| Group size (GS) | 20 |
| RPD cost per child expressed as percentage of per capita GNP | 12.5% |

formula for sub-Saharan Africa. We then find an average unit cost of 20.8% of pcGNP for the sub-Saharan countries. The difference between our 20.8% and Mingat's 17% can almost entirely be attributed to the fact that we assumed that ECCE salaries are equal to those in primary education, instead of following Mingat's empirical finding of ECCE salaries being 81% of those in primary education.

We conclude that the unit cost of 800 hours of regular programme delivery in the Arab States is $0.125 \times \text{pcGNP}$. Table 5.3 at the end of this chapter gives the actual US\$ values for each of the countries but first we will address the second ECCE modality chosen for this study: home visiting.

Home visiting

Home visiting is an important ECCE policy option for developing countries²². We define home visiting as supporting parents, community leaders and others in their roles as carers and educators of young children by giving expert advice and providing materials. Regarding home visiting there is even less standardisation than in the case of RPD. Moreover, the distinction between home visiting on the one hand and well-supported home-based programs of informal ECCE centres on the other hand, is not always clear. In practice, the former can be the first step that a community makes towards the latter.

²² Olmsted (2002) argues that "non-centre-based early childhood services" are the dominant ECCE modality for developing countries.

Indeed, when it comes to designing strategies for the expansion of ECCE, one can distinguish between a tightly planned and centrally governed roll-out of ECCE facilities, and a more organic way of expanding ECCE: starting in homes, then making it more and more professional, e.g. by introducing ongoing training, subsidies and forms of accreditation of carers and educators, and gradually moving towards more formalised settings. Home visiting can act as a catalyst in such an organic process. It is against this background that we wish to include home visiting in our estimation exercise, even if it requires the making of some strong assumptions.

One of the main things we wish to demonstrate is that home visiting can be an order of magnitude less costly than RPD. The reason for this is that the act of caring and educating *as such* is performed by parents (or groups of parents) themselves; they can be seen as unpaid volunteers, while it is only the visitor that needs to be paid. The only costs directly incurred by the act of caring and educating are the opportunity costs. These are the earnings that a parent would have received if he or she *would* have been working during the time he or she is now taking care of the children; in many cases these opportunity costs are likely to be limited²³.

Whilst the use of volunteer teachers is usually criticised in the case of adult literacy programmes

on the grounds that their motivation is often unsatisfactory, this is unlikely to be the case for early childhood services delivered by parents. For obvious reasons, their motivation to do the best they can for their own children is unquestioned.

Before developing a unit cost model for home visiting, we wish to explain the use of the term “parents” in relation to educating and caring, since it is obvious that in many cases this burden rests on the shoulders of just the mothers, who usually also perform other household tasks, and on top of that often need to generate income. The eternal dilemma in such cases is that on the one hand one wants to connect the analysis to people’s existing realities, while on the other hand one does not always wish to take those realities for granted. In this case we prefer the latter option, and will speak in neutral terms of the roles of “parents”, not excluding the possibility that fathers too may reallocate their available time over income generation, household tasks and child raising.

Adapting the normative model to home visiting

First of all it must be emphasised that a concrete arrangement for home visiting depends on the stage in which such projects find themselves. Several projects that are described in the

²³ *It is difficult to estimate the opportunity costs, since they are partly hypothetical. It is not always certain that a parent would have been able to find paid work during all of the time he or she spends caring, while in many cases parents – or at least one of them – may not even have the desire to work. In the latter case, the opportunity costs are very low or absent; the parent would have stayed home caring anyway. Nevertheless, it would be more correct to incorporate opportunity costs in the calculations. Since we do not, the costs of the home visiting modality may be underestimated to some extent in this study.*

literature are in a pioneering or implementation phase and have not yet scaled-up entirely. This may imply, for instance, that, given the usually large number of children per disadvantaged family, visitors need to address children in the whole ECCE age bracket when they make contact with a family for the first time. They will have children of zero to 6 years old in their case-load, which may seriously complicate their work. But after a number of years of working in a village or district, the project may reach a certain 'steady state'. Visitors may eventually be in the position to focus entirely on just the young families and to contact them at appropriate times, i.e. when the first child is born.

It is on this assumption – a steady state situation – that we have *constructed* an arrangement that may serve as an example. It must be stressed that this arrangement is our own creation and that it is by no means universal, even though it is inspired by talks with experts and by what we found in the literature. Again we enable and encourage the reader to manipulate the parameters in the spreadsheet, design his or her own arrangement and observe the impact on the outcomes.

Let us assume that visitors form small groups of for instance five families, all having just had their first child. We prefer a group-wise approach to that of visiting individual families because it is more cost-effective and because it may generate extra synergies, such as taking

care of one another's children, for instance on a rotational basis, and thus forming an informal ECCE 'class' together (Arnold, 1990)²⁴.

For each group of five families they would then start a series of weekly group sessions. The choice of a weekly frequency is based on Myers (1987) who found that a lower frequency fails to deliver the expected benefits. These sessions would focus on child care during the first year of a child's life. It would be ineffective at this stage to share knowledge about raising children of 5 or 6 years of age, since this is not yet on the minds of these particular families. The relatively high frequency of one session per week would allow visitors to actually attend sessions with the children, to demonstrate certain techniques and approaches to the parents and to coach the parents as they practice these techniques and approaches.

We assume that the sessions would not continue throughout the entire year, partly because of the life patterns of the families (which may be influenced by harvest or other seasonal activities), and partly because the visitor needs time for professional development, consultation with colleagues and superiors, and vacation. However, our calculation model is such that these interruptions of the weekly pattern do not influence the outcomes.

When the first born children reach the age of one, the same pattern of weekly sessions would

²⁴ Such arrangements can be found in countries as poor as Nepal and countries as rich as Denmark. In the latter, one parent may be accredited for caring for the children of others, who, on their turn, receive a subsidy.

be adopted. This could, in principle, be repeated in each of the six years of the early childhood period. Myers (1987) found counselling programmes focusing on the 0–3 age bracket as well as the 3–6 range. Some address most of the entire period.

This arrangement, and its costs, is *irrespective* of the number and age of any younger children that may have been born in these families. If a second child is born, the parents have already learned how to care for it when the first was born. And if a second child enters the next age bracket, the same is the case (Myers, 1987). Herein lies the enormous synergy of home visiting as an ECCE modality: you educate the parents once, and they can apply what they learned for any child that follows. This is not the case for regular programme delivery, where each and every child that attends generates its own costs.

The costs per child of this arrangement can be derived through the following steps (a–h). The results are presented in Table 5.2.

- a** We assume that each session takes half a day, including preparation time and other business that the visitor needs to take care of²⁵. So theoretically, a visitor can run 2 sessions a day, or 10 per 5-day working week. And since each family is visited on a weekly basis, the caseload will therefore be 10 groups of five families, i.e. 50 families.
- b** The number of children per family varies strongly per country, so we cannot simply assume one average number of children per family for the whole region. Instead we have selected the Total Fertility Rate (TFR)²⁶ as a proxy for the average number of children per family, and we keep this as a variable in the equation, just like we do for pcGNP. Thus, the total number of children served by one visitor per year is $50 \times \text{TFR}$.
- c** We assume an annual salary for visitors that is higher than that of a teacher. In practice, this is not always the case, and sometimes visitors' salaries are actually lower than those of teachers. The reason that we nevertheless opt for better pay for visitors than for teachers, is that our approach does not blindly follow empirical findings; it is normative²⁷. We think that visitors *should* be experts with a broader knowledge base that they can apply in a broader range of settings: they must not only have the package of knowledge and skills required for educating children of a certain age, but they also must have the competencies needed to transfer that package to adults. This is genuinely more complex than merely caring and educating, and it *should* be an argument for a higher esteem and a higher

²⁵ For individual sessions, one hour is the standard, but group sessions are more intensive, and there is the extra dimension of teambuilding with a view to encouraging the group to cooperate.

²⁶ The Total Fertility Rate equals the average number of children per woman. We have used the 2000–2005 values for this indicator that we found in the EFA Global Monitoring Report 2006, Annex Table 1, page 272.

²⁷ See Chapter 2 on methodology. Another example of a normative choice that 'overrules' empirical findings, is the assumption that ECCE teachers receive the same salaries as teachers in primary education. This too is not always the case, but yet desirable given the importance of development in the early years.

Table 5.2. Core cost parameters for home visiting in ECCE

| | |
|---|-----------|
| Number of groups of families attended per visitor (NGV) | 10 |
| Number of families per group (NF) | 5 |
| Number of families per visitor (NGV x NF = NFV) | 50 |
| Number of children per family = Total Fertility Rate | TFR |
| Number of children per visitor (NFV x TFR = NChV) | 50 x TFR |
| Visitors' annual salary (VAS) | 4 x pcGNP |
| % of salary on total cost (SC/TC) | 50% |
| Unit cost: home visiting cost per child per year expressed as percentage of per capita GNP = $8 \times \text{pcGNP} : (50 \times \text{TFR})$ | 0.16: TFR |

salary. A further argument is the large span of control of visitors compared to teachers; this too justifies a higher intensity of initial training and ongoing support (see also next point) and a higher salary. Seen in this light, becoming a visitor can be a career step for an experienced teacher. Furthermore, visitors should be supported by a higher level expert. We assume, for the Arab States, an annual salary of $4 \times \text{pcGNP}$ (as distinct from the $3 \times \text{pcGNP}$ we found for teachers in this region). Hence, the salary component of the unit cost equals $(4 \times \text{pcGNP}) / (50 \times \text{TFR})$.

d We now determine the non-salary component. For RPD we assumed that the non-salary component is 40% of total costs. For home visiting we can skip an important cost component: the building. On the other hand, the costs of materials such as basic medication, toys, children's books and 'toolkits' are higher because the

span of control of one counsellor is much larger than that of a teacher. The latter may be working with two groups of 20 children at one time (i.e. 40 children altogether), but the counsellor addresses 50 families on an annual basis, with a total number of children that could easily surpass 200. In other words, the material cost component weighs heavily on the single visitor. Moreover, the visitor requires strong back-up from an expert and needs periodical training (see preceding point). Hence, we assume that the ratio between the salary component and non-salary component is 50:50²⁸.

e Thus, the unit cost of counselling is $(4 \times \text{pcGNP}) \times (100/50) / (50 \times \text{TFR})$. This equals $(0.16 \times \text{pcGNP}) / \text{TFR}$.

f Where the average number of children per family (TFR) is for instance 4, this would come down to $0.04 \times \text{pcGNP}$. The more children, the lower the costs per child.

²⁸ This is under the assumption that a daily meal is not included in the unit cost. In practice, these groups of cooperating parents are good target points for nutritional programs. We assume however that such programmes have their own funding sources. If not, then the ratio of salary to non-salary costs would have to be lower, perhaps much lower.

The combination of these parameters results in the unit cost (expressed as percentage of pcGNP) according to the following formula:

$$\text{Home Visiting annual Unit Cost} = \frac{\text{VAS}}{\text{NFCO}} * \frac{1}{\text{TFR}} * \frac{1}{\text{SC/TC}}$$

Unit cost outcomes for RPD and home visiting

In the previous sections, we presented the formulae for the calculation of the unit costs of

RPD and home visiting, in both cases depending on pcGNP, and in the case of home visiting also depending on the average number of children per family, proxied by the TFR. We can now substitute observed values for the two variables – pcGNP and TFR – for the countries where the relevant data are available, so we can express the unit costs in concrete US\$, as can be seen in Table 5.3.

As Table 5.3 clearly shows, unit costs expressed in US\$ are high in the richer countries, but can

Table 5.3. Annual unit cost per modality and country

| | Unit cost (in US\$ 2003) | |
|--------------------------------|--------------------------|---------------|
| | RPD | Home visiting |
| Algeria | 267 | 122 |
| Bahrain | 1718 | 814 |
| Djibouti | 102 | 23 |
| Egypt | 145 | 56 |
| Iraq | ... | ... |
| Jordan | 239 | 85 |
| Kuwait | 2,178 | 1,032 |
| Lebanon | 710 | 413 |
| Libyan Arab Jamahiriya | 521 | 222 |
| Mauritania | 58 | 13 |
| Morocco | 190 | 90 |
| Occupied Palestinian Territory | 128 | 29 |
| Oman | 1075 | 275 |
| Qatar | 3,482 | 1,393 |
| Saudi Arabia | 1,150 | 327 |
| Sudan | 64 | 19 |
| Syrian Arab Republic | 147 | 57 |
| Tunisia | 318 | 203 |
| United Arab Emirates | 2,739 | 1,252 |
| Yemen | 70 | 13 |

Source: Authors own calculations based on GDP per capita information taken from the World Development Indicators (World Bank, 2006)

be very low in poor countries. This is especially the case for home visiting. The difference between home visiting and RPD appears to be moderate in countries such as Tunisia and Lebanon where the TFR is as low as 2.0 and 2.2, respectively. But this difference is large in countries where the TFR is above 5: Djibouti, Mauritania, Oman, Occupied Palestinian Territory and Yemen. Not surprisingly, the combination of a low pcGNP and a high TFR produces very low unit costs for home visiting in Yemen and Mauritania (US\$13), in Sudan (US\$19), in Djibouti (US\$23) and in the Occupied Palestinian Territory (US\$29).

It can also be concluded that the unit cost of home visiting for the Arab region is on average

about 4.45% of pcGDP (the TFR for the region stood at 3.6 over the period 2000–2005, so the unit cost is $16\% / 3.6 = 4.45\%$). Compared with the unit cost of 12.5% of RPD, home visiting seems three times less expensive. This is generally consistent with the findings of Myers (1987).

Thus, much can be done with relatively little money to improve the education of young children in those countries where poverty goes hand in hand with low enrolments. However, this is just an initial impression; we will return to funding issues after having discussed the numbers of children to be served (Q) in the following chapter, and the outcomes of the costing exercise in the chapter thereafter.



Chapter 6: Estimating Q: The numbers of children to be served

This chapter aims to establish the number of children to be served. As was noted in Chapter 2 this is essentially a political issue, to be determined by the governments of the countries themselves. But we resolve this by holding on to the text of Goal One, which calls for prioritising the most vulnerable and disadvantaged children. So the question is: how can we identify these children?

Two groups of children come to mind. First, children affected by conflict and disaster. Second, children who grow up in extreme poverty. We will focus on the latter, since the former are difficult to address, for reasons explained in the introduction of this report.

The most direct way of establishing the numbers of children living in poverty is by using international statistics regarding the number of people living on under US\$ 2 per day. This, however, has proven impossible since too many of the countries lack these data. Using countries' own data in this regard is not a good option since countries use different standards. Therefore, we shall use proxies of poverty instead. We do this by focusing on (i) children who are undernourished and (ii) children of illiterate parents. The arguments for the choice of these two proxies will be given later in this chapter; school-readiness will be the

leading concept. First we will examine present enrolment levels in ECCE in the individual countries, preceded by a brief assessment of their contextual diversity.

Contextual diversity

In economic terms, the Arab region shows considerable contrasts. Some of the oil producing countries in the region are among the biggest oil exporters in the world and are members of the influential Organization of Petroleum Exporting Countries (OPEC). These countries are Algeria, Iraq, Kuwait, Libyan Arab Jamahiriya, Qatar, Saudi Arabia and the United Arab Emirates. As a consequence, a big proportion of the region's total GDP is concentrated in these countries, which also show high levels of per capita GDP. Conversely, the region also embraces some very poor countries such as Mauritania, Sudan and Yemen.

Table 6.1 presents the differences across the Arab States in terms of levels of income and development. The World Bank classifies five states as high income countries, ten as middle income and three as low income. In general, there is a high correspondence between income levels and a country's place on the Human Development Index (HDI) 2005²⁹. All the countries with upper middle income or

²⁹ *The Human Development Index (HDI) incorporates indices on life expectancy at birth, adult literacy, enrolment in formal education, and GDP per capita. See table 3 in UNDP (2005).*

Table 6.1. Income and HDI levels in the Arab States

| | | Income level measured by GDP per capita ² | | | | Total |
|--|--------|--|----------------------------|--|-----------------------|-------|
| | | High Income | Upper middle income | Lower middle income | Low income | |
| Human development Level measured by HDI ¹ | High | Bahrain, Kuwait, Qatar, United Arab Emirates (4) | Libyan Arab Jamahiriya (1) | ----- (0) | ----- (0) | 5 |
| | Medium | Saudi Arabia (1) | Lebanon, Oman (2) | Algeria, Egypt, Jordan, Morocco, Syrian Arab Republic, Tunisia (6) | Sudan (1) | 10 |
| | Low | ----- (0) | ----- (0) | Djibouti (1) | Mauritania, Yemen (2) | 3 |
| Total | | 5 | 3 | 7 | 3 | 18 |

Notes: No data are available for Iraq and Occupied Palestinian Territories

¹ Level of human development is considered high when HDI > 0.80; medium when HDI > 0.50 and HDI < 0.79 and low when HDI < 0.49.

² Level of income is calculated according to 2004 GNI per capita, calculated using the World Bank Atlas method. The groups are: low-income economies, US\$ 825 or less; lower-middle-income economies, US\$ 826–3,255; upper-middle income economies, US\$ 3,256–10,065; and high-income economies, US\$10,066 or more.

Source: UNDP (2005) and World Bank (2005)

more have a medium or high level of human development, while all the countries with lower middle income or less have a medium or low human development level. The majority of the people in the Arab States live in lower middle income countries with a medium human development level. These are important contextual considerations when studying ECCE in the region.

Current enrolment in ECCE per country (Base line year = 2004)

Table 6.2 provides a summary of the current state of pre-primary education in the countries of the region. Following the definition used in international statistics, the table presents the number of children in programmes of two or more hours per day and of 100 or more days per

Table 6.2. Current state of pre-primary education in the Arab States, 2004

| Country | Pre-primary education system | | Population at eligible age | Total number of pupils | Pupils of the official age | % in private institutions | GER (%) | NER (%) |
|--------------------------------|------------------------------|----------|----------------------------|------------------------|----------------------------|---------------------------|-------------|-----------|
| | Entrance age | Duration | | | | | | |
| Algeria | 4 | 2 | 1,199,514 | 56,606 | 56,606 | . | 4.7 | 4.7 |
| Bahrain | 3 | 3 | 39,655 | 17,740 | 17,633 | 99.4 | 44.7 | 44.5 |
| Djibouti | 4 | 2 | 44,861 | 800 | 612 | 76.5 | 1.8 | 1.4 |
| Egypt | 4 | 2 | 3,270,603 | 469,942 | 248,437 | ... | 14.4 | 7.6 |
| Iraq | 4 | 2 | 1,590,822 | 90,966 | 90,966 | . | 5.7 | 5.7 |
| Jordan | 4 | 2 | 296,152 | 87,767 | 81,085 | ... | 29.6 | 27.4 |
| Kuwait | 4 | 2 | 87,752 | 61,939 | 51,703 | 33.2 | 70.6 | 58.9 |
| Lebanon | 3 | 3 | 207,032 | 154,214 | 148,975 | 76.3 | 74.5 | 72 |
| Libyan Arab Jamahiriya | 4 | 2 | 230,923 | ... | ... | 15.4 | ... | ... |
| Mauritania | 3 | 3 | 272,533 | 4,709 | ... | 77.8 | 1.7 | ... |
| Morocco | 4 | 2 | 1,281,259 | 684,783 | 594,576 | 100 | 53.4 | 46.4 |
| Occupied Palestinian Territory | 4 | 2 | 234,890 | 70,225 | 44,668 | 99.9 | 29.9 | 19 |
| Oman | 4 | 2 | 119,472 | 7,402 | 6,311 | 100 | 6.2 | 5.3 |
| Qatar | 3 | 3 | 36,338 | 11,752 | 11,439 | 92.9 | 32.3 | 31.5 |
| Saudi Arabia | 3 | 3 | 1,868,281 | 96,073 | ... | 45.9 | 5.1 | ... |
| Sudan | 4 | 2 | 1,936,357 | 445,763 | 445,763 | 74 | 23 | 23 |
| Syrian Arab Republic | 3 | 3 | 1,414,594 | 146,403 | 146,403 | 73.2 | 10.3 | 10.3 |
| Tunisia | 3 | 3 | 491,438 | ... | ... | ... | ... | ... |
| United Arab Emirates | 4 | 2 | 122,715 | 78,000 | 55,223 | 71.5 | 63.6 | 45 |
| Yemen | 3 | 3 | 1,979,839 | 15,304 | ... | 44.9 | 0.8 | ... |
| Total Arab States | | | 16,725,030 | 2,500,388 | 2,000,400 | 67 | 14.9 | 12 |

Notes: . = not applicable - = nil or negligible (p) = provisional data ... = data not available

The GER for the region does not coincide with the GER presented in Table 3.1 in Chapter 3

Source: UNESCO Institute for Statistics (2006) Online database. (The UIS database coincides with the information in the Global Education Digest of UNESCO's Institute for Statistics, but is more complete).

year, and includes only children of 3 years and older. From this it is evident that these statistics do not indicate precisely how substantial the services are that the children actually receive. This is important to bear in mind when comparing figures between countries.

Two systems are observed which divide the countries into two groups. On the one hand, there are 12 countries where the entry age is 4 years old with a two year-duration. On the other hand, eight countries established the entry age at 3 years old, in all cases with a duration of three years. As a result, in all the Arab States the entrance age to primary education is 6 years old, but the children that enter first grade arrive with a different number of years spent in ECCE, and in many cases with no ECCE experience at all since it is not part of the compulsory education in any of these countries.

The population at the eligible age for ECCE (depending on countries' own legislation) in the whole region is almost 17 million children. The reported data concern the NER, which excludes children who enter earlier or later than the typical age. These data show that only 12% of the eligible children in the Arab States are actually enrolled in pre-primary education. Equally important, the GER value indicates that the education system enrolls only 15% of eligible children leaving out the remaining 85%³⁰.

Data at country level reveals considerable variation in enrolment ratios. In eight countries,

Algeria, Djibouti, Iraq, Mauritania, Oman, Saudi Arabia, Syrian Arab Republic and Yemen, the GER is under 11%. In contrast, there are four countries where the GER is higher than 50% – Kuwait, Lebanon, Morocco, United Arab Emirates – but none of them reach the level of developed countries, which is around 80% (UNESCO, 2005a). The remaining six countries with data available have an average GER of 25%. Within countries, too, there are important regional disparities. Although it is not possible to address these in this paper, the situation in Sudan can serve as an example. In one state, enrolment is as low as 8% with another three states scoring not far above 10%, while on the other side of the spectrum there are four other states with enrolment levels in the order of 30%, one state with 44%, and one with 58%. Few states are near the national average which is, according to this source, 22% (Basheer, 2005).

As opposed to the GER, the NER excludes children who enter earlier or later than the eligible age. Timely enrolment is perhaps even more important for ECCE than it is for primary education, since ECCE curricula and activities are (or should be) sharply tailored to the stage of development in which the child finds itself. Generally speaking, in the majority of the countries, the NER level is very close to the GER level denoting that the under-aged and over-aged children make up but a small proportion. Only in five countries does the GER exceed the NER by more than 5%³¹.

³⁰ It should also be said that it is not known to what extent children formally enrolled are actually attending the programme. Some household surveys do report this type of information, but such data have not been found for the Arab States.

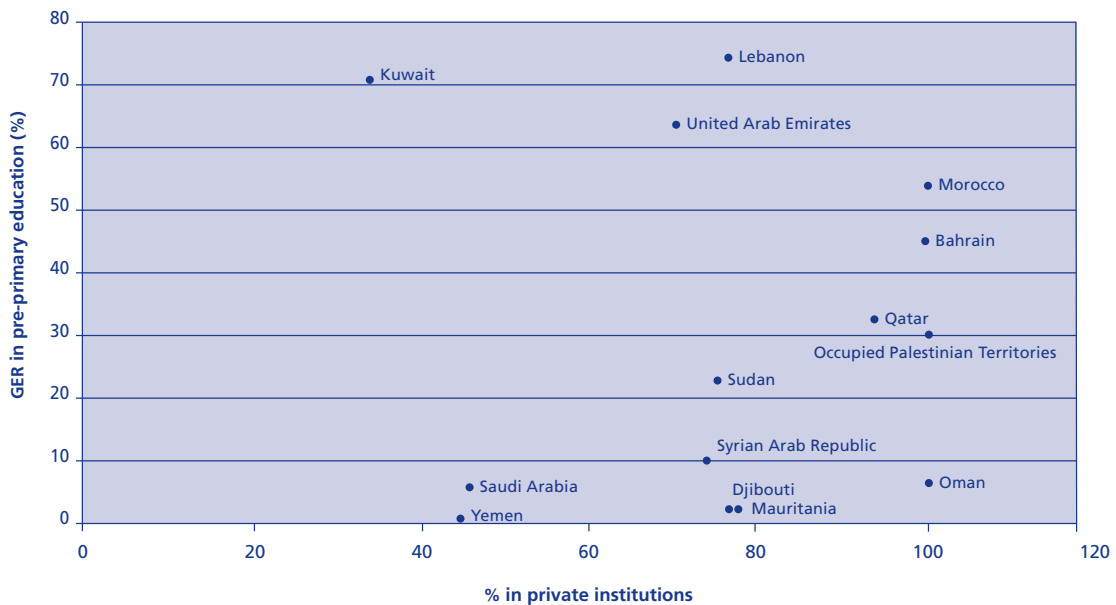
³¹ Egypt, Kuwait, Morocco, Occupied Palestinian Territory, United Arab Emirates.

As mentioned in Chapter 3, the majority of the children are enrolled in institutions that are privately managed. Two thirds of all the pupils attend institutions that are not run by the government. It is important to know that this category includes not just the for-profit organisations that offer ECCE, but also religious organisations and NGOs; it only excludes public provision. Information of this kind is available for 15 countries. In five countries, Bahrain, Morocco, Oman, Occupied Palestinian Territory and Qatar, virtually all of the ECCE system is private, and in other countries the private share is higher than 70%. Libyan Arab Jamahiriya is the only country where the private sector represents a minor proportion, at 15% of total

enrolment. Figure 6.1 shows the GER and % of students in private institutions. The bottom left of the figure indicates a positive relationship between the private sector and enrolment. In countries where the private share is low, the GER tends to be low as well; Kuwait seems to be the only country in the region that combines a large public ECCE sector with substantial enrolment.

Analysis of the current situation shows that the vast majority of children in the Arab States are being left out of pre-primary education. Additionally, the relatively small number of children who do have access to some kind of ECCE programme tend to be enrolled in private institutions where parents are likely to have to pay a fee.

Figure 6.1 Gross enrolment ratios in pre-primary education and % of students in private institutions.



Source: UNESCO Institute for Statistics (2006) online database.

Table 6.3 gives details on the children of eligible age that were out of the ECCE system in 2004. Enrolment data for 18 out of the 20 countries show that about 14 million children were out of the system. Almost 90% of them are concentrated in eight countries, all with more than one million children out of the system (Algeria, Egypt, Iraq, Saudi Arabia, Sudan, Syrian Arab Republic, Yemen). With the exception of Sudan, all these countries have a NER of 10% or lower. In contrast, there are six countries where the number of children is lower than 100,000 (Bahrain, Djibouti, Kuwait, Lebanon, Qatar, United Arab Emirates). With the exception of Djibouti, all these countries show relatively higher enrolment ratios than the average but also are less populated. These figures show the scale of the overall challenge. However, it is important to distinguish those who are currently most in need, and hence who should be prioritised in an expansion strategy. This is the aim of the following two sections.

School-readiness: Nutrition as the cornerstone

The generally low level of enrolment in ECCE in the Arab States is more worrisome in light of a study by Jaramillo and Mingat (2006) which indicates that a crucial function of early interventions is to prepare children for entry into primary school. Children who enter school not yet ready to learn, whether because of lack of academic skills or social and emotional deficits, will continue to have difficulties later in their learning trajectories (Rouse et al., 2005).

If we understand ECCE as a key factor in getting children ready for school it is crucial to identify those categories of children who are presently least ready, and therefore most in need. In order to do that, we will use the ‘school readiness’ concept to help us distinguish and quantify those children who should be addressed first, once again mindful of the text of EFA Goal One which draws our attention to the most vulnerable and disadvantaged children.

Although most research focuses on academic skills, such as vocabulary size, complexity of spoken language, etc., readiness for school also requires social and emotional skills. Children must be able to follow directions, work with a group, engage in classroom tasks and exert impulsive control (Rouse et al., 2005). In other words, as Rouse et al. claim, “school readiness is more than what children know: it is multidimensional. Children’s ability to learn goes beyond cognitive development and includes physical, social, and emotional health as well as general approaches to learning”.

According to KIDS COUNT (2005) there are at least five important dimensions related to school readiness which interact and affect a child’s ability to learn and to succeed in school:

1. **Physical well-being and motor development:** general health and growth; gross and fine motor skills; and the absence of unattended physical conditions or exposure to toxic substances.
2. **Social and emotional development:** ability to interact socially, take turns and cooperate;

Table 6.3 Number of children out of the ECCE system in 2004

| Country | Age group 2002/03 | Population at eligible age (A) | Total number of pupils enrolled in ECCE | Number of children of official age (B) | NER | Number of children at eligible age, out of the ECCE system (A) – (B) |
|--------------------------------|-------------------|--------------------------------|---|--|-------------|--|
| Algeria | 4–5 | 1,199,514 | 56,606 | 56,606 | 4.7 | 1,142,908 |
| Bahrain | 3–5 | 39,655 | 17,740 | 17,633 | 44.5 | 22,022 |
| Djibouti | 4–5 | 44,861 | 800 | 612 | 1.4 | 44,249 |
| Egypt | 4–5 | 3,270,603 | 469,942 | 248,437 | 7.6 | 3,022,166 |
| Iraq | 4–5 | 1,590,822 | 90,966 | 90,966 | 5.7 | 1,499,856 |
| Jordan | 4–5 | 296,152 | 87,767 | 81,085 | 27.4 | 215,067 |
| Kuwait | 4–5 | 87,752 | 61,939 | 51,703 | 58.9 | 36,049 |
| Lebanon | 3–5 | 207,032 | 154,214 | 148,975 | 72.0 | 58,057 |
| Libyan Arab Jamahiriya | 4–5 | 230,923 | ... | ... | ... | ... |
| Mauritania ¹ | 3–5 | 272,533 | 4,709 | ... | 1.7 | 267,824 |
| Morocco | 4–5 | 1,281,259 | 684,783 | 594,576 | 46.4 | 686,683 |
| Occupied Palestinian Territory | 4–5 | 234,890 | 70,225 | 44,668 | 19.0 | 190,222 |
| Oman | 4–5 | 119,472 | 7,402 | 6,311 | 5.3 | 113,161 |
| Qatar | 3–5 | 36,338 | 11,752 | 11,439 | 31.5 | 24,899 |
| Saudi Arabia ¹ | 3–5 | 1,868,281 | 96,073 | ... | 5.1 | 1,772,208 |
| Sudan | 4–5 | 1,936,357 | 445,763 | 445,763 | 23.0 | 1,490,594 |
| Syrian Arab Republic | 3–5 | 1,414,594 | 146,403 | 146,403 | 10.3 | 1,268,191 |
| Tunisia | 3–5 | 491,438 | ... | ... | ... | ... |
| United Arab Emirates | 4–5 | 122,715 | 78,000 | 55,223 | 45.0 | 67,492 |
| Yemen ¹ | 3–5 | 1,979,839 | 15,304 | ... | 0.8 | 1,964,535 |
| Total for Arab States | | 16,725,030 | 2,500,388 | 2,000,400 | 12.0 | 13,886,183 |

Notes:

¹ In these countries since there is no data on pupils at the official ECCE age, the ratios shown are GER instead of NER. Also total pupils are considered for the estimation of the number of children out of the ECCE system.

Source: UNESCO Institute for Statistics (2006) online database

positive sense of self worth and ability; and the ability to interpret and express feelings.

3. **Language development:** verbal language, including listening, speaking and vocabulary; emerging literacy, including print awareness (assigning sounds to letter combinations), story sense (recognising story elements) and writing process (representing ideas through drawing, letter-like shapes, or letters).
4. **Approaches to learning:** enthusiasm, curiosity and persistence in completing tasks.
5. **Cognition and general knowledge:** understanding of shapes and spatial relationships; knowledge of social conventions such as holidays; and knowledge derived from looking across objects, events or people for similarities, differences and associations.

School readiness involves more than just children. In the broadest sense it is about children, families, early environments, schools and communities. Children are not innately ready or not ready for school. Their skills and development are strongly influenced by their families and through their interaction with other people and environments before coming to school (Maxwell and Clifford, 2004). Thus, factors that influence children's readiness for success in school are socio-economic status (which often interacts with race or ethnicity); child's health; family background characteristics, particularly the mother's education level and mental health; and the home environment. Participation in some type of pre-school programme is not only an additional factor that influences positively

children's readiness, but it can also be argued that it could be crucial to make a difference for the most disadvantaged children who belong to poorer families and grow up in less stimulating environments.

There have been attempts to operationalise the school readiness concept. In the US, a partnership between 17 States undertook an interesting project to create a set of measurable indicators related to and defining school readiness that can be tracked regularly over time at the state and local levels (KIDS COUNT, 2005). The School Readiness Indicators Initiative created the 'Ready Child Equation' to describe the range of components that influence a child's ability to be ready for school. This includes: i) ready families which describes children's family context and home environment; ii) ready communities, which focuses on the community resources and support available to families with young children, iii) ready services which describes the availability, quality and affordability of proven programs that influence child development and school readiness; and finally iv) ready schools which describes critical elements of schools that influence child development and school success.

For the Arab States, however, we unfortunately lack the data for these components of school-readiness. Therefore, we have no choice but to use a proxy, i.e. an indicator that best captures the relevant aspect and can be used in the absence of a more direct indicator of that aspect. Because of

the nature of the present study we have selected children's *nutrition* as a first proxy to quantify the number of children that are most in need.

The key argument is that undernourishment is usually associated with poverty, low parental education status and home environments that do not stimulate learning. The plight is largely invisible: three quarters of the children who die from causes related to malnutrition were only mildly or moderately undernourished, showing no outward sign of their vulnerability. Good nutrition is the corner-stone for survival, health and development for current and succeeding generations. Well-nourished children perform better in school, grow up to become healthy adults and in turn give their children a better start in life. Undernourished children have lowered resistance to infection; they are more likely to die from common childhood ailments like diarrhoeal diseases and respiratory infections, and for those who survive, frequent illness saps their nutritional status, locking them into a vicious cycle of recurring sickness and faltering growth (www.childinfo.org/areas/malnutrition). It should be emphasised, however, that nutrition is a necessary but not sufficient condition for healthy development. Some children grow up in poverty but are nevertheless well-nourished; the poverty factor will then dominate the nourishment factor, so that the child is still at risk of lagging behind.

Table 6.4 presents estimates for the Arab States of the number of children that are

most in need of an ECCE program, judged by their nutritional condition. The estimation is based on three malnutrition indicators – underweight, stunting and wasting – to estimate the percentage of children of pre-primary school age which are at physical disadvantage and therefore should receive priority in policies to expand ECCE.

It can be seen from column E of Table 6.4 that a fairly high proportion of children are undernourished in the Syrian Arab Republic (33%), Morocco (27%), Djibouti (19%), Jordan, Lebanon, Sudan and Yemen (all 15%), and in Algeria, Oman and the Occupied Palestinian Territory (all 12%). Assuming that the same percentage of the total eligible population (column A) has the same nutritional condition as the under 5s it is possible to estimate the number of children of eligible age who are undernourished (column F). Thus, it can be said that in the whole region there are more than more than 2 million children of ECCE eligible age who are undernourished. The highest numbers are found in Egypt, Morocco, Sudan, Syrian Arab Republic and Yemen. These five countries all have more than 300,000 undernourished children and they contain almost 80% of the undernourished children of eligible age living in the region.

We have compared these absolute numbers of undernourished children with two other relevant figures (Table 6.5). First, we assume that all undernourished children are out of the

Table 6.4. Estimates of the number of pre-primary age children that are most in need, 2004

| Country | Population of eligible age (A) | % of under-5s (1996-2005) suffering from (moderate & severe): | | | | Estimated number of children of pre-primary eligible age which are undernourished (F) |
|--------------------------------|--------------------------------|---|--------------|-------------|------------------------|---|
| | | Underweight (B) | Stunting (C) | Wasting (D) | Unweighted average (E) | |
| Algeria | 1,199,514 | 10 | 19 | 8 | 12 | 147,940 |
| Bahrain | 39,655 | 9 | 10 | 5 | 8 | 3,172 |
| Djibouti | 44,861 | 18 | 26 | 13 | 19 | 8,524 |
| Egypt | 3,270,603 | 9 | 16 | 4 | 10 | 316,158 |
| Iraq | 1,590,822 | ... | ... | ... | ... | ... |
| Jordan | 296,152 | 16 | 22 | 6 | 15 | 43,436 |
| Kuwait | 87,752 | 4 | 9 | 2 | 5 | 4,388 |
| Lebanon | 207,032 | 10 | 24 | 11 | 15 | 31,055 |
| Libyan Arab Jamahiriya | 230,923 | 3 | 12 | 3 | 6 | 13,855 |
| Mauritania | 272,533 | 5 | 15 | 3 | 8 | 20,894 |
| Morocco | 1,281,259 | 32 | 35 | 13 | 27 | 341,669 |
| Occupied Palestinian Territory | 234,890 | 10 | 18 | 9 | 12 | 28,970 |
| Oman | 119,472 | 18 | 10 | 7 | 12 | 13,938 |
| Qatar | 36,338 | 4 | 9 | 3 | 5 | 1,938 |
| Saudi Arabia | 1,868,281 | 6 | 8 | 2 | 5 | 99,642 |
| Sudan | 1,936,357 | 14 | 20 | 11 | 15 | 290,454 |
| Syrian Arab Republic | 1,414,594 | 41 | 43 | 16 | 33 | 471,531 |
| Tunisia | 491,438 | 7 | 18 | 4 | 10 | 47,506 |
| United Arab Emirates | 122,715 | 4 | 12 | 2 | 6 | 7,363 |
| Yemen | 1,979,839 | 14 | 17 | 15 | 15 | 303,575 |
| Total for Arab States | 16,725,030 | | | | | 2,196,008 |

Notes:

(A) Population of eligible age for pre-primary school

(B) Proportion of under-5s falling below minus 2 standard deviations (moderate) and minus 3 standard deviations (severe) from the median weight-for-age of the reference population

(C) Proportion of under-5s falling below minus 2 and minus 3 standard deviations from the median height-for-age of the reference population

(D) Proportion of under-5s falling below minus 2 and minus 3 standard deviations from the median weight-for-height of the reference population

(E) $(B+C+D)/3$

(F) $(E) * (A)$

Source: UNESCO Institute for Statistics (2006); UNICEF (2006)

pre-primary system³², and we divide them by the total number of children of eligible age that are currently out of the pre-primary system (5th column). This indicator represents the undernourished children as a proportion of the whole ECCE challenge. In other words it reflects the proportion of all the children who are not enrolled that each country would need to address in order to provide an ECCE programme to all the undernourished children. From the table it can be seen that in 11 countries, getting all the undernourished children in an ECCE program represents less than 15% of the whole ECCE challenge³³. In contrast, in Lebanon, Morocco and the Syrian Arab Republic the undernourished represent around half of the ECCE challenge in the country.

Second, the number of undernourished children of pre-primary eligible age is divided by the total number of pupils in pre-primary education. This indicator, presented in the last column of Table 6.5, relates undernourishment with the current size of the pre-primary education system. There are seven countries where the value is higher than one: Algeria, Djibouti, Mauritania, Oman, Saudi Arabia, Syrian Arab Republic and Yemen. In these countries the number of undernourished children of pre-primary education eligible age exceeded the current number of pupils in the system. For instance, in Yemen, there were more than 300,000 children with nutritional problems compared with the 15,000 pupils in pre-primary education which means that the system would

³² This assumption is defensible, but it must be said that it is not entirely sure that it holds true in each and every country. If we look at Algeria in Table 6.5 we see a very small number of enrolled children and a very large number of not enrolled children and based on the above assumption a number of undernourished children that is about 13% of the not enrolled. In this case it is very unlikely that a significant number of undernourished children is among the happy few that is enrolled. A lesser degree of likelihood exists for Lebanon and Morocco, where a relatively large number of children is enrolled, and where the number of undernourished children comes closer to the number of not enrolled than in the case of Algeria. Generally, however, the Algerian pattern seems dominant in the region.

³³ Algeria, Bahrain, Egypt, Kuwait, Mauritania, Occupied Palestinian Territory, Oman, Qatar, Saudi Arabia, United Arab Emirates and Yemen.

Table 6.5. Estimated numbers of undernourished children as a percentage of total ECCE pupils and the number of eligible children not in the ECCE system

| Country | Total number of pupils (A) | Number of children of eligible age out of the pre-primary education system (B) | Estimated number of children of pre-primary eligible age which are undernourished (C) | (C)/(B) (in %) | (C)/(A) |
|----------------------------------|----------------------------|--|---|----------------|------------|
| Algeria | 56,606 | 1,142,908 | 147,940 | 12.9 | 2.6 |
| Bahrain | 17,740 | 22,022 | 3,172 | 14.4 | 0.2 |
| Djibouti | 800 | 44,249 | 8,524 | 19.3 | 10.7 |
| Egypt | 469,942 | 3,022,166 | 316,158 | 10.5 | 0.7 |
| Iraq | 90,966 | 1,499,856 | ... | ... | ... |
| Jordan | 87,767 | 215,067 | 43,436 | 20.2 | 0.5 |
| Kuwait | 61,939 | 36,049 | 4,388 | 12.2 | 0.1 |
| Lebanon | 154,214 | 58,057 | 31,055 | 53.5 | 0.2 |
| Libyan Arab Jamahiriya | ... | ... | 13,855 | ... | ... |
| Mauritania | 4,709 | 267,824 | 20,894 | 7.8 | 4.4 |
| Morocco | 684,783 | 686,683 | 341,669 | 49.8 | 0.5 |
| Occupied Palestinian Territory | 70,225 | 113,161 | 28,970 | 15.2 | 0.4 |
| Oman | 7,402 | 190,222 | 13,938 | 12.3 | 1.9 |
| Qatar | 11,752 | 24,899 | 1,938 | 7.8 | 0.2 |
| Saudi Arabia | 96,073 | 1,772,208 | 99,642 | 5.6 | 1.0 |
| Sudan | 445,763 | 1,490,594 | 290,454 | 19.5 | 0.7 |
| Syrian Arab Republic | 146,403 | 1,268,191 | 471,531 | 37.2 | 3.2 |
| Tunisia | ... | ... | 47,506 | ... | ... |
| United Arab Emirates | 78,000 | 67,492 | 7,363 | 10.9 | 0.1 |
| Yemen | 15,304 | 1,964,535 | 303,575 | 15.5 | 19.8 |
| Total for the Arab States | 2,500,388 | 13,886,183 | 2,196,008 | 15.8 | 0.9 |

need to be 20 times larger to accommodate all these children. In contrast, there are ten countries where the situation is the opposite. In Bahrain, Egypt, Jordan, Kuwait, Lebanon, Morocco, Occupied Palestinian Territory, Qatar, Sudan and the United Arab Emirates the inclusion of the undernourished would require an expansion which is significantly lower either because the percentage of undernourished children is low or the pre-primary education system is relatively large.

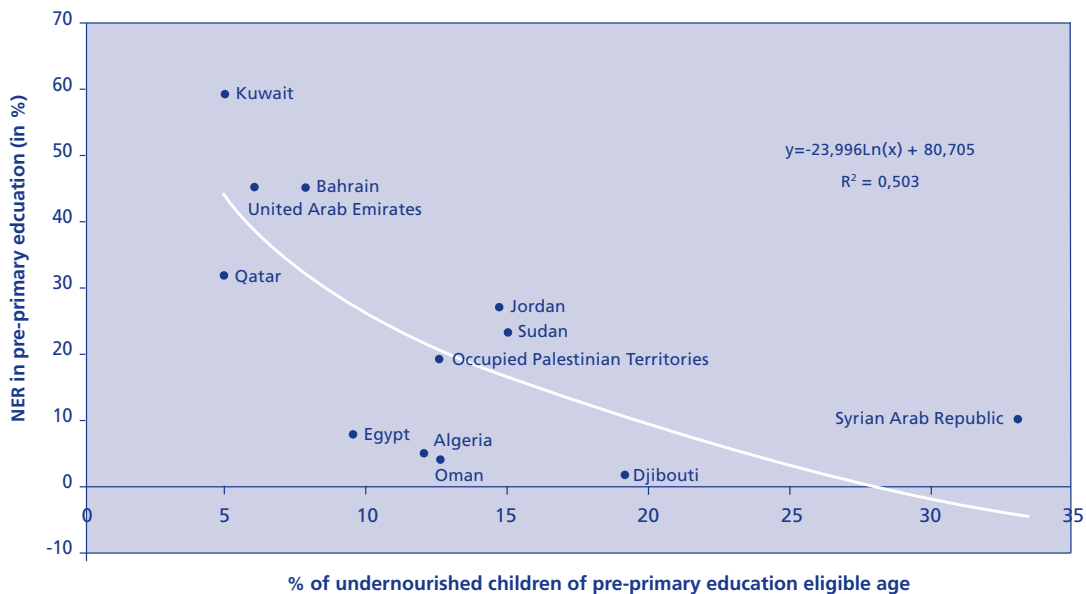
In fact, there is a strong tendency that countries with the largest numbers of undernourished children have the smallest ECCE capacity, as

shown in Figure 6.2. The evidence presented here shows that where ECCE is most needed, the level of enrolment is low and policies to reach out to those children are imperative.

The second step: Reaching children with illiterate parents

As mentioned earlier, we need to think in terms of a phased approach: first reaching out for the most disadvantaged children, and then moving towards a second group of slightly less disadvantaged children. And since at the other end of the spectrum the provision for the more advantaged children expands autonomously

Figure 6.2: Percentage of undernourished children by pre-primary NER, per country, 2004



Note: Lebanon and Morocco are not included in the figure since they are outliers.

Sources: UNESCO Institute of Statistics (2006) online database; UNICEF (2006)

– driven by their parents demands and their purchasing power – there will be universal provision when the two movements meet. So how can we determine the next step?

As was argued at the beginning of this chapter, direct and internationally comparable measures of poverty are not available, so we have to rely on proxy measures that are available. The first proxy that we chose was undernourishment. The second is illiteracy, the argument being that illiteracy, too, is strongly associated with a number of forms of disadvantage, including

poor parenting skills and unfavourable environments for children to grow up. The GMR on literacy thoroughly reviewed the evidence in this regard (UNESCO, 2005a). In order to use illiteracy as the basis for the second phase, the number of children with illiterate parents would obviously have to be higher than the number of undernourished children. The assumption is then that all undernourished children have illiterate parents, while in addition there are children with illiterate parents who are not undernourished. By means of Table 6.6 we investigate whether this approach is defensible.

Table 6.6. Percentage of undernourished children and adult illiteracy rate.

| Country | % of undernourished children | Adult illiteracy rate (%) |
|---------------------------------------|------------------------------|---------------------------|
| Algeria | 12.3 | 30.2 |
| Bahrain | 8.0 | 6.8 |
| Djibouti | 19.0 | ... |
| Egypt | 9.7 | 44.4 |
| Iraq | ... | ... |
| Jordan | 14.7 | 10.1 |
| Kuwait | 5.0 | 17.1 |
| Lebanon | 15.0 | ... |
| Libyan Arab Jamahiriya | 6.0 | 18.3 |
| Mauritania | 7.7 | 48.8 |
| Morocco | 26.7 | 49.3 |
| Occupied Palestinian Territory | 12.3 | 8.1 |
| Oman | 11.7 | 25.6 |
| Qatar | 5.3 | 10.8 |
| Saudi Arabia | 5.3 | 20.6 |
| Sudan | 15.0 | 41 |
| Syrian Arab Republic | 33.3 | 17.1 |
| Tunisia | 9.7 | 25.7 |
| United Arab Emirates | 6.0 | 22.7 |
| Yemen | 15.3 | 51 |

Note: Countries in bold are those with an illiteracy rate lower than the malnutrition rate.

Source: UNESCO (2005) and UNICEF (2006)

In Table 6.6 we compare, for individual countries in the Arab region, the percentage of undernourished children with the percentage of children with illiterate parents³⁴. It appears that for all but four of the countries, the latter is higher – sometimes much higher – than the former. The four countries that represent an exception to this rule are in bold, and they are home to less than 10% of the population of the Arab States. All this suggests that illiteracy is not a perfect second-stage proxy for vulnerability, but nevertheless a defensible one.

In summary, we adopt reaching undernourished children as Step 1 towards universal ECCE and reaching the children of illiterate parents who aren't already captured in the first step as Step 2. We accept that in a few countries there will be no need for Step 2 as Step 1 will cover all the illiterate children as it is assumed that all are already within the undernourished group.

The expansion scenario

We now have the ingredients to elaborate our expansion scenario. Table 6.7 summarises the following information for the individual countries in the region:

- the present GER in pre-primary education, most probably the more advantaged children
- the percentage of undernourished children, assumed to be the most disadvantaged ones
- the percentage of children of illiterate parents

- the 'target' GER for the first step: this is the total of the present GER plus the percentage of undernourished children
- the 'target' GER for the second step: this is the total of the present GER plus the children of illiterate parents, except in those countries where their number is lower than that of the undernourished children. In these countries, the GER in Step 2 is capped to the level after Step 1.

In those cases where the percentage of undernourished children is available but where the illiteracy rate is not available (Djibouti and Lebanon) we also cut off the Step 2 target at the level of Step 1. Once the literacy rate is available, it can be inserted for these countries.

In Iraq, Libyan Arab Jamahiriya and Tunisia the exercise cannot be carried out for lack of data. We keep these countries in the exercise, and also in the spreadsheet, hoping that more data will be available later.

It must be noted, that in our exercise we simulate that Step 1 is reached in 2010, and that Step 2 is completed in 2015. The choice to complete Step 1 in 2010 and Step 2 in 2015 is of course an arbitrary one. It is necessary to make a choice in order to do this exercise, but in practice countries themselves determine how fast to expand ECCE. For this reason, the targets have also been made variable in the spreadsheet and can be altered by the reader.

³⁴ We work on the assumption that the percentage of children with illiterate parents is equal to the illiteracy rate. This assumption possibly underestimates the number of children with illiterate parents, since non literate adults tend to have more children on average than literate parents. We lack the data to control for this bias. Thus, it should be noted that there is a tendency towards underestimation of the need for ECCE.

Table 6.7. Current GER in pre-primary education and target GERs for 2010 and 2015

| Country | GER in pre-primary education | % of undernourished children | % of children with illiterate parents | Target GER for Step 1 (2010) | Target GER for Step 2 (2015) |
|--------------------------------|------------------------------|------------------------------|---------------------------------------|------------------------------|------------------------------|
| Algeria | 4.72 | 12.3 | 30.2 | 17.1 | 34.9 |
| Bahrain | 44.74 | 8.0 | 6.8 | 52.7 | 52.7 |
| Djibouti | 1.78 | 19.0 | ... | 20.8 | ... |
| Egypt | 14.37 | 9.7 | 44.4 | 24.0 | 58.8 |
| Iraq | 5.72 | ... | ... | ... | ... |
| Jordan | 29.64 | 14.7 | 10.1 | 44.3 | 44.3 |
| Kuwait | 70.58 | 5.0 | 17.1 | 75.6 | 87.7 |
| Lebanon | 74.49 | 15.0 | ... | 89.5 | ... |
| Libyan Arab Jamahiriya | ... | 6.0 | 18.3 | ... | ... |
| Mauritania | 1.73 | 7.7 | 48.8 | 9.4 | 50.5 |
| Morocco | 53.45 | 26.7 | 49.3 | 80.1 | 80.1 |
| Occupied Palestinian Territory | 29.90 | 12.3 | 8.1 | 42.2 | 42.2 |
| Oman | 6.20 | 11.7 | 25.6 | 17.9 | 31.8 |
| Qatar | 32.34 | 5.3 | 10.8 | 37.7 | 43.1 |
| Saudi Arabia | 5.14 | 5.3 | 20.6 | 10.5 | 25.7 |
| Sudan | 23.02 | 15.0 | 41.0 | 38.0 | 64.0 |
| Syrian Arab Republic | 10.35 | 33.3 | 17.1 | 43.7 | 43.7 |
| Tunisia | ... | 9.7 | 25.7 | ... | ... |
| United Arab Emirates | 63.56 | 6.0 | 22.7 | 69.6 | 86.3 |
| Yemen | 0.77 | 15.3 | 51.0 | 16.1 | 51.8 |

Source: UNESCO (2005) and UNICEF (2006).

Algeria is a good example to illustrate the expansion scenario. It presently has a low level of enrolment of 4.72%, predominantly among upper class children. At the other end

of the social spectrum we find that 12.3% of children are undernourished. Reaching them would bring the GER to a level of 17.1% in 2010, including a small 'autonomous' increase

of regular ECCE enrolment. The number of children with illiterate parents is 30.2%, which is clearly larger than the number of undernourished children. The undernourished are assumed to be a subgroup of the ones with illiterate parents, while the latter are assumed to be out of ECCE³⁵. Including the children of illiterate parents (who were not yet included as undernourished) would bring the GER to a level of 34.9%. Two thirds of the total population of eligible age children would therefore still be excluded.

Egypt has both a higher initial level of enrolment and a higher illiteracy rate than Algeria. Reaching all children of illiterate parents in Egypt would bring 58.8% of all children to ECCE. Kuwait and the United Arab Emirates combine even higher levels of enrolment with small numbers of undernourished children, but they have substantial numbers of illiterates. These two countries would make significant progress towards universal enrolment by reaching the children of illiterate parents. Most remarkable is perhaps Morocco, which manages to enroll a high number of children despite its moderate pcGNP. Reaching all children of illiterate parents would actually make the level of enrolment exceed 100%, which means that some of the children of illiterate parents must already be enrolled.

Finally, it can be seen that the number of undernourished children exceeds the number

of children with illiterate parents in Bahrain, Jordan, Occupied Palestinian Territory and the Syrian Arab Republic. In these countries, the level reached in Step 2 does not exceed that in Step 1.

Projections of enrolment in ECCE

In the previous sections of this chapter we presented the current state of pre-primary education in the countries of the region. We showed the numbers of children enrolled in pre-primary education and those who are left out. More importantly, we identified a group of children in a disadvantaged situation who should receive priority in an ECCE expansion strategy. This is reflected in the 2 steps scenario. In this section, we present projections to 2010 and 2015 of the estimated number of additional children to be served with an ECCE programme to achieve the target GERs established in Table 6.8.

The estimates are based on the following assumptions:

- Populations of eligible age projections are calculated using as a proxy the annual growth of the 0 to 4 years old population in each country extracted from the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects.
- The target GERs as mentioned are taken from Table 6.7
- The number of children enrolled in private

³⁵ *Once again we should emphasise that these are assumptions and not certainties, and this has its implications. For example, if a more than negligible share of the children of illiterate parents are already enrolled – which seems to be the case in Morocco – then we would be overestimating the need for ECCE.*

Table 6.8. Number of additional children to be incorporated by 2010 and 2015 following the suggested expansion scenario.

| Country | Population of eligible age | GER | Total number of pupils | % in private institutions | Population of eligible age | Target GER | Total number of pupils | Pupils in private institutions | Additional pupils to be served compared with 2004 | Population of eligible age | Target GER | Total number of pupils | Pupils in private institutions | Additional pupils to be served compared with 2004 |
|--------------------------------|----------------------------|-------------|------------------------|---------------------------|----------------------------|------------|------------------------|--------------------------------|---|----------------------------|------------|------------------------|--------------------------------|---|
| | 2004 base line year | | | | Projections by 2010 | | | | | Projections by 2015 | | | | |
| Algeria | 1,199,514 | 4.7 | 56,606 | 67 | 1,329,088 | 17,1 | 226,642 | 42,023 | 165,939 | 1,396,276 | 34.9 | 487,567 | 45,773 | 423,114 |
| Bahrain | 39,655 | 44.7 | 17,740 | 99 | 39,655 | 52.7 | 20,912 | 17,634 | 3,172 | 39,655 | 52.7 | 20,912 | 17,634 | 3,172 |
| Djibouti | 44,861 | 1.8 | 800 | 77 | 45,310 | 20.8 | 9,417 | 618 | 8,611 | 45,310 | 20.8 | 9,417 | 623 | 8,606 |
| Egypt | 3,270,603 | 14.4 | 469,942 | 67 | 3,468,850 | 24.0 | 833,750 | 333,946 | 344,722 | 3,514,328 | 58.8 | 2,065,323 | 350,732 | 1,559,511 |
| Iraq | 1,590,822 | 5.7 | 90,966 | 67 | 1,670,208 | ... | ... | ... | ... | 1,747,392 | ... | ... | ... | ... |
| Jordan | 296,152 | 29.6 | 87,767 | 67 | 300,040 | 44.3 | 132,925 | 59,576 | 44,386 | 300,040 | 44.3 | 132,925 | 60,227 | 43,735 |
| Kuwait | 87,752 | 70.6 | 61,939 | 33 | 99,678 | 75.6 | 75,341 | 23,358 | 10,607 | 99,678 | 87.7 | 87,402 | 25,975 | 20,051 |
| Lebanon | 207,032 | 74.5 | 154,214 | 76 | 208,576 | 89.5 | 186,651 | 118,543 | 31,559 | 209,220 | 89.5 | 187,227 | 119,279 | 31,399 |
| Libyan Arab Jamahiriya | 230,923 | ... | ... | 15 | 254,204 | ... | ... | ... | ... | 258,631 | ... | ... | ... | ... |
| Mauritania | 272,533 | 1.7 | 4,709 | 78 | 307,712 | 9.4 | 28,908 | 4,136 | 23,726 | 325,159 | 50.5 | 164,296 | 4,577 | 158,674 |
| Morocco | 1,281,259 | 53.4 | 684,783 | 100 | 1,330,571 | 80.1 | 1,065,958 | 711,139 | 354,819 | 1,333,243 | 80.1 | 1,068,098 | 733,875 | 334,223 |
| Occupied Palestinian Territory | 234,890 | 29.9 | 70,225 | 100 | 257,758 | 42.2 | 108,852 | 76,985 | 31,797 | 273,637 | 42.2 | 115,558 | 83,182 | 32,306 |
| Oman | 119,472 | 6.2 | 7,402 | 100 | 130,992 | 17.9 | 23,398 | 8,116 | 15,282 | 139,054 | 31.8 | 44,213 | 8,763 | 35,450 |
| Qatar | 36,338 | 32.3 | 11,752 | 93 | 40,277 | 37.7 | 15,174 | 12,101 | 2,239 | 40,277 | 43.1 | 17,376 | 13,185 | 3,357 |
| Saudi Arabia | 1,868,281 | 5.1 | 96,073 | 46 | 1,971,031 | 10.5 | 206,478 | 46,523 | 107,980 | 2,048,199 | 25.7 | 527,254 | 48,645 | 426,633 |
| Sudan | 1,936,357 | 23.0 | 445,763 | 74 | 2,003,818 | 38.0 | 761,866 | 341,357 | 304,610 | 2,021,739 | 64.0 | 1,294,332 | 351,239 | 827,194 |
| Syrian Arab Republic | 1,414,594 | 10.3 | 146,403 | 73 | 1,518,705 | 43.7 | 663,413 | 115,054 | 509,123 | 1,538,539 | 43.7 | 672,077 | 122,069 | 510,772 |
| Tunisia | 491,438 | ... | ... | 67 | 504,637 | ... | ... | ... | ... | 504,637 | ... | ... | ... | ... |
| United Arab Emirates | 122,715 | 63.6 | 78,000 | 72 | 136,828 | 69.6 | 95,180 | 62,184 | 10,766 | 144,244 | 86.3 | 124,427 | 68,088 | 34,109 |
| Yemen | 1,979,839 | 0.8 | 15,304 | 45 | 2,313,275 | 16.1 | 372,584 | 8,029 | 356,122 | 2,578,061 | 51.8 | 1,334,739 | 9,141 | 1,317,166 |
| Total Arab States | 16,725,030 | 14.9 | 2,500,388 | | 17,931,214 | | 4,827,447 | 1,981,321 | 2,325,462 | 18,557,319 | | 8,353,143 | 2,063,006 | 5,769,472 |

institutions grows at the rate of the 0 to 4-year-old population growth.

- Where the % in private institutions is not available we assume that two thirds of the pupils are in private institutions (regional average).

The columns highlighted white are estimates of the additional number of children to be served by ECCE in each year. This is calculated by the number of children who should be served according to the target GER not counting the children who would be going to a private institution. It is important not to include those pupils in the expansion strategy who would be attending private institutions anyway. Although, it could be argued that the proportion of pupils going to private institutions would eventually go down if the size and the quality of public supply increases.

Taking the region as a whole, the number of additional children required by 2010 and 2015 are concentrated in a small group of countries.

This is a combination of the size of the eligible population on the one hand, and the gap to be covered between the 2004 GER and the target GER on the other hand. It is important to mention that each country has a different GER target according to the criteria already developed. Thus, Algeria, Egypt, Morocco, Saudi Arabia, Sudan, Syrian Arab Republic and Yemen contain around 90% of all the additional children to be incorporated in the region.

Table 6.9 shows the scale of expansion required in each system. By far, Yemen is the country that most urgently needs a higher increase. Currently there are 15,000 pupils enrolled but the country needs to reach more than one million by 2015. Djibouti, a relatively small country in terms of absolute numbers to be addressed, needs to expand its system by a factor of 10. As expected, in the relatively rich countries like Bahrain, Kuwait, Lebanon, Qatar and the United Arab Emirates the degree of expansion that is needed is modest.

Table 6.9 Scale of expansion in the ECCE system by country

| Country | Total number of pupils in pre-primary education in 2004 (A) | Additional pupils by 2010 (B) | Additional pupils by 2015 (C) | (B)/(A) | (C)/(A) |
|----------|---|-------------------------------|-------------------------------|---------|---------|
| Algeria | 56,606 | 165,939 | 423,114 | 2.9 | 7.5 |
| Bahrain | 17,740 | 3,172 | 3,172 | 0.2 | 0.2 |
| Djibouti | 800 | 8,611 | 8,606 | 10.8 | 10.8 |
| Egypt | 469,942 | 344,722 | 1,559,511 | 0.7 | 3.3 |
| Jordan | 87,767 | 44,386 | 43,735 | 0.5 | 0.5 |

– continued overleaf

| | | | | | |
|--------------------------------|---------|---------|-----------|------|------|
| Kuwait | 61,939 | 10,607 | 20,051 | 0.2 | 0.3 |
| Lebanon | 154,214 | 31,559 | 31,399 | 0.2 | 0.2 |
| Mauritania | 4,709 | 23,726 | 158,674 | 5.0 | 33.7 |
| Morocco | 684,783 | 354,819 | 334,223 | 0.5 | 0.5 |
| Occupied Palestinian Territory | 70,225 | 31,797 | 32,306 | 0.5 | 0.5 |
| Oman | 7,402 | 15,282 | 35,450 | 2.1 | 4.8 |
| Qatar | 11,752 | 2,239 | 3,357 | 0.2 | 0.3 |
| Saudi Arabia | 96,073 | 107,980 | 426,633 | 1.1 | 4.4 |
| Sudan | 445,763 | 304,610 | 827,194 | 0.7 | 1.9 |
| Syrian Arab Republic | 146,403 | 509,123 | 510,772 | 3.5 | 3.5 |
| United Arab Emirates | 78,000 | 10,766 | 34,109 | 0.1 | 0.4 |
| Yemen | 15,304 | 356,122 | 1,317,166 | 23.3 | 86.1 |

Chapter 7: Presentation and discussion of the outcomes

Based on the unit costs developed in Chapters 4 and 5, and on the estimations in Chapter 6 of the numbers of children to be served, we can now present the final outcomes as they have been calculated in the spreadsheet. We present these outcomes in two sections: first for the individual countries, and then assessing the additional resource requirements of the region as a whole. The second section is more speculative and it attempts to provide an

indicative answer to the question: what will it cost to achieve Goal One in the Arab States?

Additional costs per country

Tables 7.1 and 7.2 present the core findings of this publication. Table 7.1 multiplies (from left to right) the numbers of children to be reached in 2010 and 2015 with the unit costs, thus arriving at the outcomes for 2010 and 2015.

Table 7.1. Additional pupils based on countries' own eligibility criteria and additional costs in US\$ millions by modality and year.

| Country | Additional pupils by 2010 | Additional pupils by 2015 | Unit costs in US\$ 2003 | | Additional annual cost in US\$ million 2003 | | | |
|--------------------------------|---------------------------|---------------------------|-------------------------|---------------|---|---------------|---------------|---------------|
| | | | Home visiting | RPD 800 hours | by 2010 | | by 2015 | |
| | | | | | Home visiting | RPD 800 hours | Home visiting | RPD 800 hours |
| Algeria | 165,939 | 423,114 | 122 | 267 | 20.2 | 44.28 | 51.6 | 112.9 |
| Bahrain | 3,172 | 3,172 | 814 | 1,718 | 2.6 | 5.4 | 2.6 | 5.4 |
| Djibouti | 8,611 | 8,606 | 23 | 102 | 0.2 | 0.9 | 0.2 | 0.9 |
| Egypt | 344,722 | 1,559,511 | 56 | 145 | 19.4 | 50.1 | 88.0 | 226.8 |
| Iraq | ... | ... | ... | ... | ... | ... | ... | ... |
| Jordan | 44,386 | 43,735 | 85 | 239 | 3.8 | 10.6 | 3.7 | 10.5 |
| Kuwait | 10,607 | 20,051 | 1,032 | 2,178 | 11.0 | 23.1 | 20.7 | 43.7 |
| Lebanon | 31,559 | 31,399 | 413 | 710 | 13.0 | 22.4 | 13.0 | 22.3 |
| Libyan Arab Jamahiriya | ... | ... | 222 | 521 | ... | ... | ... | ... |
| Mauritania | 23,726 | 158,674 | 13 | 58 | 0.3 | 1.4 | 2.0 | 9.2 |
| Morocco | 354,819 | 334,223 | 90 | 190 | 32.0 | 67.4 | 30.1 | 63.5 |
| Occupied Palestinian Territory | 31,797 | 32,306 | 29 | 128 | 0.9 | 4.1 | 0.9 | 4.1 |

– continued overleaf

| | | | | | | | | |
|---------------------------------------|------------------|------------------|-------|-------|--------------|--------------|--------------|----------------|
| Oman | 15,282 | 35,450 | 275 | 1,075 | 4.2 | 16.4 | 9.8 | 38.1 |
| Qatar | 2,239 | 3,357 | 1,393 | 3,482 | 3.1 | 7.8 | 4.7 | 11.7 |
| Saudi Arabia | 107,980 | 426,633 | 327 | 1,150 | 35.3 | 124.2 | 139.5 | 490.6 |
| Sudan | 304,610 | 827,194 | 19 | 64 | 5.7 | 19.4 | 15.4 | 52.8 |
| Syrian Arab Republic | 509,123 | 510,772 | 57 | 147 | 29.0 | 74.8 | 29.1 | 75.0 |
| Tunisia | ... | ... | 203 | 318 | ... | ... | ... | ... |
| United Arab Emirates | 10,766 | 34,109 | 1,252 | 2,739 | 13.5 | 29.5 | 42.7 | 93.4 |
| Yemen | 356,122 | 1,317,166 | 13 | 70 | 4.5 | 24.9 | 16.8 | 91.9 |
| Arab States | 2,325,462 | 5,769,472 | – | – | 198.8 | 526.7 | 470.8 | 1,352.8 |
| Low income countries | 684,459 | 2,303,034 | – | – | 10.5 | 45.7 | 34.2 | 153.9 |
| Low and lower middle income countries | 2,112,059 | 5,182,995 | – | – | 115.1 | 293.8 | 236.9 | 643.5 |

Source: Author's own calculations

Table 7.1 presents the additional expenditure that will be needed in 2010 and 2015 to accomplish the GER target rates. Additional expenditure means the extra money that is needed *on top of* the private and public resources already invested in ECCE, including the money that goes into autonomous growth that is projected to take place. In other words, Table 7.1 only concerns the policies of governments targeted at disadvantaged children. It must be noted that the figures in the table are still based on countries' own policy choices regarding the typical age of enrolment; i.e. the figures concern 4–5 years olds and 3–5 year olds, depending on the country. Additionally, it should be emphasised that the level of expenditure in 2015

is reached gradually through annual increases. Each year, more children are incorporated compared with the base year 2004 and there are expenditures associated to that. The *average* annual expenditure over the whole period until 2015 is thus lower than the top-level which is reached in 2015.

As it shows annual costs only, Table 7.1 does not show how much the *accumulated* costs are for each country, nor does it show the *average* costs per year during the period of expansion. Table 7.2 therefore provides these figures. Annex II further explains the relationship between the approach of Table 7.1 and that of Table 7.2, using Yemen as an example.

Table 7.2. Additional accumulated and average costs in US\$ millions by modality and year.

| | Accumulated additional cost for the period | | | | Annual average additional cost | | | |
|---------------------------------------|--|----------------|----------------|----------------|--------------------------------|--------------|---------------|--------------|
| | 2005–2010 | | 2005–2015 | | 2005–2010 | | 2005–2015 | |
| | Home visiting | RPD | Home visiting | RPD | Home visiting | RPD | Home visiting | RPD |
| Algeria | 57 | 125 | 243 | 532 | 10 | 21 | 22 | 48 |
| Bahrain | 9 | 19 | 22 | 46 | 1 | 3 | 2 | 4 |
| Djibouti | 0 | 2 | 1 | 7 | 0 | 0 | 0 | 1 |
| Egypt | 62 | 161 | 340 | 878 | 10 | 27 | 31 | 80 |
| Iraq | ... | ... | ... | ... | ... | ... | ... | ... |
| Jordan | 12 | 35 | 31 | 88 | 2 | 6 | 3 | 8 |
| Kuwait | 37 | 78 | 121 | 254 | 6 | 13 | 11 | 23 |
| Lebanon | 44 | 76 | 109 | 188 | 7 | 13 | 10 | 17 |
| Libyan Arab Jamahiriya | ... | ... | ... | ... | ... | ... | ... | ... |
| Mauritania | 1 | 4 | 6 | 29 | 0 | 1 | 1 | 3 |
| Morocco | 105 | 221 | 259 | 546 | 17 | 37 | 24 | 50 |
| Occupied Palestinian Territory | 3 | 13 | 8 | 34 | 1 | 2 | 1 | 3 |
| Oman | 12 | 48 | 49 | 190 | 2 | 8 | 4 | 3 |
| Qatar | 10 | 26 | 31 | 76 | 2 | 4 | 3 | 7 |
| Saudi Arabia | 110 | 388 | 561 | 1,972 | 18 | 65 | 51 | 179 |
| Sudan | 18 | 63 | 74 | 253 | 3 | 10 | 7 | 23 |
| Syrian Arab Republic | 81 | 208 | 226 | 583 | 13 | 35 | 21 | 53 |
| Tunisia | ... | ... | ... | ... | ... | ... | ... | ... |
| United Arab Emirates | 46 | 100 | 197 | 431 | 8 | 17 | 18 | 39 |
| Yemen | 10 | 54 | 63 | 346 | 2 | 9 | 6 | 31 |
| Total Arab States | 618.8 | 1,620.5 | 2,340.4 | 6,450.2 | 103.1 | 270.1 | 212.8 | 586.4 |
| Low income countries | 28.9 | 1202 | 143.2 | 627.6 | 4.8 | 20.0 | 13.0 | 57.1 |
| Low and lower middle income countries | 346.8 | 872.3 | 1,244.1 | 3,259.7 | 57.8 | 145.4 | 113.1 | 296.3 |

Generally speaking, the differences between the outcomes per country are even more marked than they are in Table 5.3 which reported just the unit cost, because the outcomes not only depend on pcGNP and TFR, but also on the size of countries' populations and the proportions of disadvantaged children. For example, the lowest additional costs are found in Djibouti, where the unit costs are not the lowest, but where the total number of inhabitants is small. Yemen, in contrast, combines the second lowest unit costs with a sizeable population, resulting in a more substantial financial gap to be bridged. The highest total costs are found in Saudi Arabia, which is mainly the result of a large population and a high pcGNP.

Table 7.2 clearly illustrates how the Step 1–Step 2 approach results in a relatively moderate financial challenge for 2010 and a more ambitious one in 2015. This is in accordance with the experience with major policy changes: it usually takes a few years to generate the financial resources and to actually have them available, while building capacity (training teachers, preparing buildings, organizing support structures) also takes time. Thus there would be a slow start followed by acceleration after 2010.

The three bottom rows of Table 7.2 present (i) the total challenge for the whole region, (ii) the challenge for just the low income countries of the region, and (iii) the challenge for the low income countries plus the lower middle income countries. This breakdown is given to show the significant but not unexpected

difference between the figures for all of the Arab States, and those for just the low income countries. Even the difference between all Arab States and the low plus lower middle income countries is a factor two in 2015. Obviously these differences are caused by the high unit costs in the richer countries of the region. Their present enrolment levels may be high and the number of disadvantaged children may be low, but since their pcGNPs are high, they still account for a large share of the total costs for the region. This phenomenon has been the rationale for the second and last section of this chapter.

A tentative assessment of the funding gaps in the poorer countries

One could argue that Tables 7.1 and 7.2 still do not give a compact single answer to the question: how much will it cost to achieve Goal One in the Arab States? As we have just seen, the table includes rich countries that on the one hand strongly inflate the overall outcomes, but on the other hand are unlikely to require foreign assistance. In fact, some may even act as donors (Abd-El-Jaleel, 2005). Thus, it seems defensible to focus on the low income countries among the Arab States. As we shall see in Chapter 8, there are arguments to defend that the amount of domestic resources that are available for ECCE will be very limited in countries with both a low GNP and a low level of enrolment in primary education; much of the resources that these countries themselves can reserve for basic education are likely to be invested in primary education.

Furthermore, we need to take into account that Tables 7.1 and 7.2 are not entirely realistic, in that they focus on countries' official age group (3–5 or 4–5), both for home visiting and RPD, while in practice home visiting is usually applied for the younger of the 0–5 age range and RPD for the older ones. This justifies the following simulation, using Yemen and Sudan as examples.

In Yemen, 3–5 is the official age group for ECCE. We assume that RPD is provided in these three years, and that this is preceded by three years of home visiting during the age 0–2. In other words: a 3 + 3 model. In countries such as Sudan where 4–5 is the official age group for ECCE, we assume four years of home visiting followed by two years of RPD, or a 4 + 2 model.

For Yemen, the additional costs of providing RPD to all disadvantaged children of 3–5 years old in 2015 are US\$ 92 million, as can be seen from Table 7.1. Now, if we could assume that the total number of children of 0–2 equals that of 3–5, then we could conclude from Table 7.1 that the cost of providing home visiting to all disadvantaged children of 0–2 is US\$ 16.8 million. The total additional annual cost of running the 3 + 3 model for Yemen in 2015 would thus be $92 + 16.8 = \text{US\$ } 109$ million.

However, the assumption we just made would imply that every subsequent age cohort is equal

in size to the preceding one. This is actually not true for Yemen or for the other low income countries in the region. All these countries are still characterised by high fertility rates³⁶. Thus, we must be aware of a certain 'demographic bias' in this tentative exercise, leading to a certain underestimation of the costs.

Keeping this in mind, we now look at Sudan where the 4 + 2 model applies. In this country, two years of RPD cost US\$ 52.8 million annually. Two years of home visiting would cost US\$ 15.4 million, so four years of home visiting requires US\$ 30.8 million. In total, the annual costs of running the 4 + 2 model in Sudan would amount to $52.8 + 30.8 = \text{US\$ } 83.6$ million.

The two remaining low income countries for which data are available are Djibouti and Mauritania. Both follow the 3 + 3 model. For these countries – both are much smaller than Yemen and Sudan – the outcomes are US\$ 1.1 and 11.2 million, respectively. So, the total for the four low income countries together would be US\$ 204.9 million.

The same approach can be followed in the five lower-middle income countries for which the necessary data are available: Algeria, Egypt, Jordan, Morocco and the Syrian Arab Republic. For the first four we must apply the 4 + 2 model, and for the last one the 3 + 3 model. For these countries, the demographic bias is much less

³⁶ This is can be observed at the US census website (www.census.gov) where a menu of 'population pyramids' is provided for all countries.

strong, sometimes absent or reversed. The overall outcome for these lower-middle income countries is US\$ 864.8 million³⁷. Together with the low income countries this would add up to US\$ 1069.7 million.

We have also estimated what the cost requirements would be if the entire 0–5 age range were to be covered by home visiting, even though it is uncommon to reach the “older” children by this modality. Not surprisingly, this would reduce the cost requirements in the four low income countries most strongly: from US\$ 204.9 million down to US\$ 84.2 million. In the five lower-middle income countries the decrease is less marked, both in absolute and in relative terms: from US\$ 864.8 million down to US\$ 578.4 million. The total cost of providing home visiting to the whole age range in the low- and lower-middle income countries would be US\$ 662.6 million (against US\$ 1069.7 million for home visiting followed by RPD).

So what is the final answer to the question: what will it cost to achieve Goal One in the *poorer* Arab States? It is clear that this is a matter of judgment – or even political instinct – rather than an objective outcome of a calculation. We remind the reader once again of the many assumptions that needed to be made in this exercise, of the countries missing from the exercise due to a lack of data, of the arbitrary nature of the decision to include low and lower-middle income countries in this section and to exclude others, of the demographic bias, etc. As a strictly personal conviction, however, the authors estimate the answer to be US\$ 1069.7 million. Three or four years of professional support to the parents, followed by two or three years in a quality ECCE programme of 800 hours per year, seems to be what these particular children need and deserve.

³⁷ The separate amounts for the five countries are, respectively, US\$ 216.1 million, US\$ 402.8 million, US\$ 17.9 million; US\$ 123.7 million and US\$ 104.1 million.

Chapter 8: Funding issues

Estimating costs is one issue, finding the resources to cover those costs is quite another. It is beyond the scope of this report to identify with any degree of precision sources for the costs estimated in the preceding chapter. What is possible, and what this chapter aims to do, is to (i) provide an indication of domestic resources presently invested in ECCE, (ii) to look at World Bank lending in this area, (iii) to assess the scope for increasing aid flows to

ECCE, and finally (iv) to provide a brief and very general assessment of the possibly available financial resources, against the cost estimations presented in Chapter 7.

Domestic investments in ECCE

Table 8.1 shows the Arab States' public expenditure on education as a percentage of GDP, broken down by level of education.

Table 8.1. Public expenditure on education as a percentage of GDP, by education level (2004)

| Country | Total | Pre-primary | Primary | Secondary and post-secondary non-tertiary | Tertiary |
|----------------------------------|----------------------|-------------------|----------------------|---|-------------------|
| Algeria | ... | ... | 1.6 ** ⁻¹ | 1.9 ** ⁻¹ | ... |
| Bahrain | ... | - ⁻² | 1.8 ** ⁻² | 1.6 ** ⁻² | ... |
| Djibouti | 5.8 | x | x | x | x |
| Egypt (p) | ... | ... | ... | ... | ... |
| Iraq | ... | ... | ... | ... | ... |
| Jordan (p) | ... | - ⁻² | 2.2 ⁻² | 2.1 ⁻² | ... |
| Kuwait | 8.1 | 0.7 | 1.6 | 2.9 | 2.8 |
| Lebanon | 2.6 | x | x | x | 0.6 |
| Libyan Arab Jamahiriya | ... | ... | ... | ... | ... |
| Mauritania | ... | ... | ... | ... | ... |
| Morocco | 6.4 ⁻² | . ⁻² | 2.6 ⁻² | 2.8 ⁻² | 0.9 ⁻² |
| Occupied Palestinian Territories | ... | ... | ... | ... | ... |
| Oman | 4.3 ** ⁻² | . ⁻² | 1.7 ** ⁻² | 2.4 ** ⁻² | ... |
| Qatar | ... | ... | ... | ... | ... |
| Saudi Arabia | ... | ... | ... | ... | ... |
| Sudan | ... | ... | ... | ... | ... |
| Syrian Arab Republic | ... | ... | 2.4 ⁻² | 1.8 ⁻² | ... |
| Tunisia (p) | 6.4 ⁻² | - ⁻² | 2.1 ** ⁻² | 2.8 ** ⁻² | 1.5 ⁻² |
| United Arab Emirates | ... | 0.1 ⁻² | 0.6 ⁻² | 0.8 ⁻² | ... |
| Yemen | ... | ... | ... | ... | ... |

Source: UNESCO Institute for Statistics (2006), table 14.

Clearly, Table 8.1 provides but a patchy picture of ECCE funding in the Arab States. As Table 6.2 showed, ECCE funding is predominantly private – in some countries by 100% – while data on private funding for ECCE is entirely lacking for the Arab States. Yet, Table 8.1 does provide an indication of the *scope* for initiating and expanding public ECCE funding in the region, since it reports total education spending as a percentage of GDP for at least some of the Arab countries. It appears that this indicator has an order of magnitude of roughly 5% to 6% on average, with high and low outliers for Kuwait and Lebanon respectively. This allows us to make a comparison with countries in other regions that have similar levels of overall public spending on education. If we go through table 14 of UNESCO (2006) (from which Table 8.1 above is a selected section) we find that countries elsewhere that spend around 5–6% of GNP on education, and usually invest 0.4–0.6% of their GNP in ECCE (excluding private investment, as we did for the Arab States), with scarce extremes of 0.2% and 1.0%. In other words: a bit less than 10% of the public education budget appears to go to ECCE. This rule of thumb – ECCE receiving 10% of the budget – is also fairly consistent with what we find in UNESCO (2006, table 14) for countries in regions where ECCE is more developed (Latin America, Central and East Europe, and North America and Western Europe). This even holds true in those countries where overall spending on education is below or above the bracket of 5–6% of GNP.

However, Mingat et al. (2006) assumes a lower percentage, namely 5% of the education budget, as the desirable level of public investment in ECCE for the Gambia. This is a country where enrolment in ECCE is still far from universal; the GER fell from 19.7 in 1998/1999 to 18.3 in 2002/2003. We tend to think that raising investment in ECCE to a level of 5% of the education budget is a good intermediary step for low-enrolment countries, with 10% being a good benchmark for a more mature situation.

If we apply the 5%-rule to Djibouti and Morocco (the only two countries that appear both in the second part of Chapter 7 and Table 8.1), then we find that Djibouti should be able to reserve some US\$ 2 million for ECCE annually, and Morocco some US\$ 320 million. In both cases this concerns an order of magnitude that seems broadly sufficient to cover the annual costs of running the 3 + 3 model in Djibouti or the 4 + 2 model in Morocco. It should be added, however, that Djibouti faces a low primary enrolment level, leaving perhaps little financial scope for ECCE.

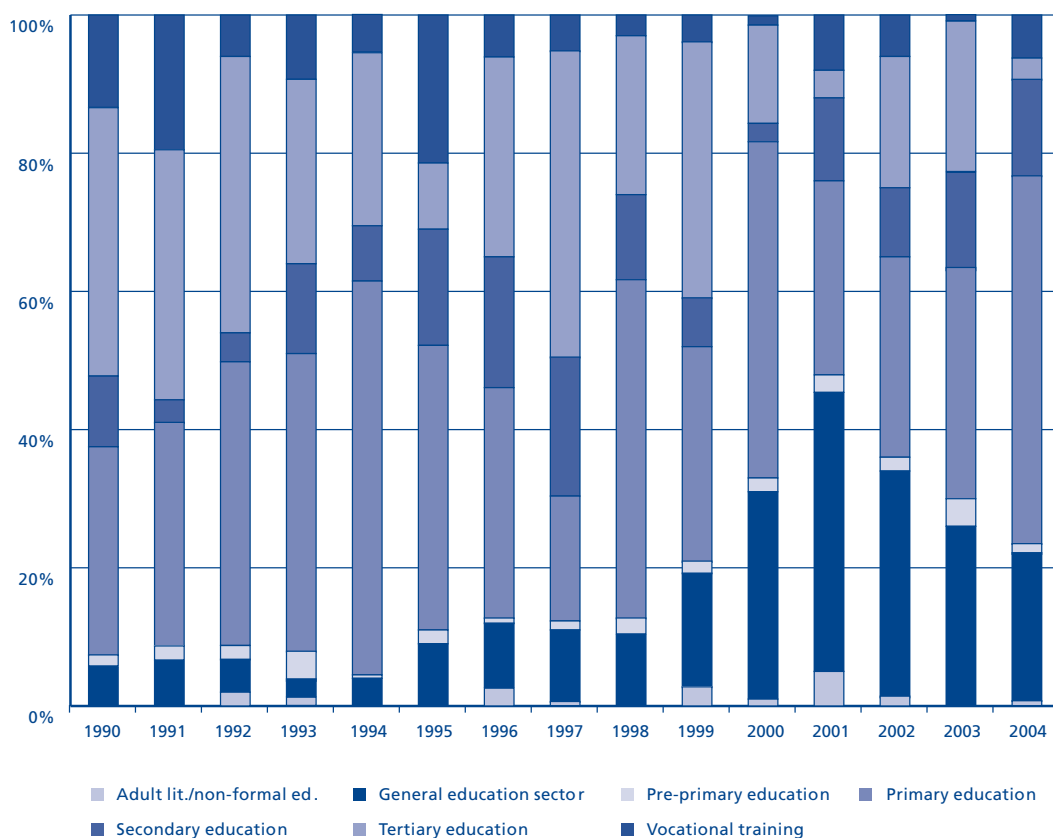
More generally, the above suggests that well-balanced education systems should invest a fair amount of money in young children, leaving perhaps higher education a bit more open for private contributions (while safeguarding access for poorer students), rather than the other way around. From an equity perspective, substantial public investment in the formative early years is more sensible than it is in the very last stage of the educational career, which many children never reach.

International aid dedicated to ECCE

Data on international aid regarding ECCE are very scarce. Support for ECCE is often included in support to basic education more in general, while breakdowns in which the share of ECCE is visible are usually lacking. However, in order to provide some indication of foreign assistance for ECCE, we refer to Figure 8.1 which is copied from the EFA Global Monitoring Report (UNESCO, 2005a). This figure which shows a breakdown of World Bank lending by education sub-sector (UNESCO, 2005a). This is a significant indication since World Bank

lending accounts for approximately 40% of total multilateral support to education. The figure indicates that ECCE (more specifically pre-primary education) has received only a very small share of all education related lending since 1990. The emphasis is on primary education which received about 40% of education-related lending, and on various forms of post-primary education that received another 40%. Most of what remains was in the form of general support to the education sector, which is unlikely to include a large share for ECCE. Since total World Bank lending for education has been in the order of US\$ 1.5 billion in recent years,

Figure 8.1. Composition of total World Bank education lending for 1990–2004



Source: World Bank Education Statistics Database <http://www1.worldbank.org/education/edstats/>

the lending for ECCE has been in the order of some tens of millions of US\$, i.e. a fraction of the estimated costs of achieving Goal One in the Arab States alone.

As said, World Bank lending is only one of several potential sources of external funding. However, there is no strong indication that the share for ECCE is significantly larger in those other sources. A substantial increase of that share will be difficult to achieve, since so many developing countries are battling to achieve universal primary education (UPE), which, rightly or wrongly, receives most of their attention and that of the international community. Some indication of bilateral aid is given in Table 8.2, which concerns Official Development Assistance (ODA). The table shows that bilateral aid to education is about three times higher than the aid from major multilateral donors. But the share of bilateral aid to education that goes to *basic* education (of which ECCE forms a small part) is only 25%,

which is even smaller than it is in the case of multilateral aid (57%).

Table 8.3 provides an overview of the bilateral aid to education and basic education received by the Arab States per individual country. It should be noted, once again, that ECCE is included in basic education, but that its share within this category is unknown.

The prospects for the near future are difficult to assess. On the one hand, a substantial increase in ODA in general is foreseen (i.e. for all sectors, not just education). There are hopes that the members of the Development Assistance Committee (DAC) of the Organisation for Economic Cooperation and Development (OECD) will provide approximately US\$ 120 billion in 2010, which is twice the amount that was disbursed by them in 2000 (UNESCO, 2005a). On the other hand, there are recent and unofficial figures that suggest that the actual disbursements to basic education remained

Table 8.2. Total ODA to education and basic education, five year annual averages for 1999–2003 and 2003 (constant 2002 US\$ billions)

| | 1999–2003 Average | | 2003 | |
|----------------------------------|-------------------|-----------------|-------------|-----------------|
| | Education | Basic Education | Education | Basic Education |
| Bilateral Donors (DAC Countries) | 4.22 | 0.91 | 4.65 | 1.16 |
| Major Multilateral Donors | 1.31 | 0.59 | 1.66 | 0.94 |
| Total ODA | 5.53 | 1.5 | 6.31 | 2.1 |

Source: (UNESCO, 2005a:118).

constant at US\$ 2.8 billion between 2004 and 2005, after a steady increase over the years that passed since the adoption of the Dakar Framework for Action in 2000. In fact, the commitments to basic education actually fell in 2005 (UNESCO, 2007).

Overall assessment

Countries and bilateral and multilateral donors all seem to favour higher levels of education above earlier learning, to a degree that does not seem to be justified by an analysis of

Table 8.3. Bilateral aid to education and basic education (in total and per capita) in the Arab States (2003)

| | Aid to education | Aid to education per capita | Aid to basic education | Aid to basic education per primary school age child (constant 2003 US\$) |
|--------------------------------|--|-----------------------------|--|---|
| | in (constant 2003 US\$) 2003–2004 average | | in (constant 2003 US\$) 2003–2004 average | |
| Algeria | 143.2 | 4.5 | 10.4 | 2.6 |
| Bahrain | 0.4 | 0.5 | ... | 0.0 |
| Djibouti | 22.3 | 28.9 | 3.7 | 29.9 |
| Egypt | 93.8 | 1.3 | 58.1 | 7.4 |
| Iraq | 89.6 | 3.2 | 73.1 | 16.6 |
| Jordan | 33.7 | 6.1 | 12.7 | 15.6 |
| Lebanon | 41.0 | 11.6 | 1.2 | 2.7 |
| Libyan Arab Jamahiriya | 0.0 | 0.0 | 0.0 | 0.0 |
| Mauritania | 19.8 | 6.7 | 0.8 | 1.7 |
| Morocco | 280.2 | 9.1 | 5.6 | 1.5 |
| Occupied Palestinian Territory | 42.7 | 12.2 | 14.8 | 0.1 |
| Oman | 0.5 | 0.2 | 0.0 | 0.1 |
| Saudi Arabia | 3.5 | 0.1 | 0.0 | 0.0 |
| Sudan | 22.8 | 0.6 | 11.5 | 2.2 |
| Syrian Arab Republic | 46.4 | 2.5 | 0.8 | 0.5 |
| Tunisia | 119.7 | 12.1 | 0.3 | 0.3 |
| Yemen | 94.1 | 4.6 | 82.3 | 23.2 |
| Arab States | 1053.7 | 3.6 | 275.3 | 7.1 |

Source: UNESCO (2006, AID tables, table 5).

costs and benefits. The costs that have been estimated in Chapter 7 seem high, but they are not insurmountable once countries succeed in allocating 5% of the education budget to ECCE, and once donors too reconsider the distribution of their resources over the various levels of education. But even in that case it will be difficult to reserve more money for ECCE as long as UPE has not been achieved, since primary education strongly dominates the EFA agenda's of countries and donors. Two strategies come to mind when trying to achieve a breakthrough. The first is to continue to emphasise vis-à-vis governments that ECCE pays itself back in higher efficiency further up in the education system and in an impressive number of social and economic benefits.

The second strategy is to increase funding from private actors. Parents can be asked to pay fees, and if they are unable to do so they may make in-kind contributions, e.g. by assisting in the day-to-day activities for the children. But one can also think of the increasing number of national or multinational corporations that are actively pursuing corporate social responsibility (CSR) activities. Consumers in developed countries are increasingly interested in products that are not only useful but are supplied by socially responsible businesses. In response, a

growing number of firms are engaged in social activities directly or funding projects in different social areas. This offers a clear opportunity to raise additional funds for ECCE. Philanthropic foundations also have a large role in this kind of funding. Although the figures should be treated with caution (some foundations prefer a low profile, often from a sense that publicising such work is undignified or improper) an OECD study has found that their contributions to education form the second largest proportion after health and family planning (OECD, 2003).

The dilemma is, of course, that funding inspired by commercial or philanthropic interests is never guaranteed in the long term. At the end of the day they are no good alternatives to countries securing essential public services based on stable tax revenues. Yet, an argument for an open mind towards a temporary and partial reliance on private contributions lies in the fact that the benefits of ECCE take a certain amount of time to materialise. If private funding can help to bring ECCE provision to a significantly higher level and keep it there for some time, the benefits will occur in the form of higher efficiency in education and lower public expenditure, so that governments can gradually take over funding entirely.

References

- Abd-El-Jaleel, E. (2005) *A Study on Early Childhood Care and Development in the Republic of Yemen*. Cairo, Egypt: UNESCO Cairo Office.
- ADEA Working Group on Early Childhood Development (2003) *Early Childhood Development as an Important Strategy to Improve Learning Outcomes*. Paris, France: ADEA.
- Arab Resource Collective (1994) *Rights of the Child in the Arab World: Needs and Challenges. A Report on a Regional Workshop, Cyprus, 9th–11th May 1994*. Nicosia: Arab Resource Collective.
- Arnold, C. (1990) *Site Visit: Nepal Case Study*. Washington, DC: The Consultative Group on ECCD, World Bank.
- Basheer, N. (2005) *The UNESCO Early Childhood Policy Review Project: The Background Report of Sudan*. Cairo, Egypt: UNESCO Cairo Office.
- Bennett, J. (2004) *Early Education Financing: What is Useful to Know?* Policy Brief on Early Childhood. No 23, May 2004. Paris, France: UNESCO.
- The Consultative Group Secretariat (1993) *Site Visit: India – Integrated Child Services*. ICDS. Available online at www.ecdgroup.com.
- EFA Monitoring Team (2005) The 'Outline for Consultation' for the forthcoming fifth edition of the EFA Global Monitoring Report. Available online at www.efareport.unesco.org
- Gaag, J. van der, and Tan, J. (1998) *The Benefits of Early Childhood Development Programs: An Economic Analysis*. Washington, DC: World Bank
- Hussein, L. (2005) *Readiness of Jordanian Children for School*. Powerpoint presentation, delivered at the conference "Urban Children and Youth in the MENA Region" held in Dubai, 16/18 May 2005. Lara Hussein is Assistant Secretary General, Director Childhood Unit of the National Council for Family Affairs in Jordan.
- Hyde, K. (2006) *Investing in Early Childhood Development: The Potential Benefits and Cost Savings*. Paris, France: ADEA.
- Issa, S. (2006) *A Costing Model of the Madrasa Early Childhood Development Program in East Africa*. Paris, France: ADEA.
- Jaramillo, A and Mingat, A. (2006) *Early Childhood Development in Sub-Saharan Africa: What Would it Take to Meet the Millennium Development Goals?* Paper presented at the ADEA Biennale held in Gabon, March 2006. Paris, France: ADEA.
- Jaramillo, A. and Tietjen, K. (2001) *Early Childhood Development in Africa: Can We Do More for Less?* Washington, DC: World Bank.
- KIDS COUNT (2005) *Findings from the National School Readiness Indicators Initiative A 17 State Partnership*. Available online at www.gettingready.org/matriarch/d.asp?PageID=303&PageName2=pdfhold&p=&PageName=Getting+Ready+%2D+Full+Report%2Epdf

- Masse, N. and Barnett, S. (2002) *A Benefit Cost Analysis of the Abecedarian Early Childhood Intervention*. Available online at www.nieer.org.
- Maxwell, K. and R.M. Clifford. (2004) Research in review: school readiness assessment. *Young Children* 59 (1): 42–46.
- Mingat, A. (2006) *Early Childhood Care and Education in Africa: Towards Expansion of Coverage and Targeting of Efficient Services*. Paper presented at the ADEA Biennale in Gabon held in March 2006. Paris, France: ADEA.
- Mingat, A., IREDU, CNRS and the University of Dijon (2006) *Evaluating the Costs of Scaling Up ECD Interventions: The World Bank Costing Model with Burkina Faso and The Gambia*. Paris, France: ADEA.
- Myers, B. (1987) *Home-based Programmes for Early Childhood Care and Development*. Coordinators' Notebook No. 4, April 1987. The Hague, The Netherlands: Bernard van Leer Foundation.
- Myers, B. (2004) *In Search of Quality in Programmes of Early Childhood Care and Education*. Background paper for EFA global Monitoring Report. Available online at www.efareport.unesco.org.
- Myers, B. (2006) Quality issues related to early childhood learning. *IIEP Newsletter*, January–March 2006. Paris, France: IIEP.
- Myers, C. (1998) The case of pre-primary education: the cost effectiveness of Shishu kaksha centers, Nepal. In: Evans, J., Myers, R.G. and Ilfeld, E. (Eds) *Early Childhood Counts: A Programming Guide on Early Childhood Care for Development*; Washington, DC: The World Bank.
- Njenga, A. and Kabiru, M. (2001) *In the Web of Cultural Transition: A Tracer Study of Children in Embu District, Kenya*. The Hague, The Netherlands: Bernard van Leer Foundation.
- National Team for Early Childhood Development (2000) *Early Childhood Development Strategy in Jordan*. New York, NY: UNICEF.
- OECD (2003) Philanthropic foundations and development co-operation, *DAC Journal* 4(3).
- Organization of the Islamic Conference (OIC), the United Nations Children's Fund (UNICEF) and the Islamic Educational, Scientific and Cultural Organization (ISESCO) (2005) *Investing in the Children of the Islamic World*. A joint report by these three organisations. New York, NY: UNICEF.
- Olmsted, P. (2002) *Data Collection and System Monitoring in Early Childhood Programs*. Early Childhood and Family Policy Series No 5. Paris, France: UNESCO. Available online at <http://unesdoc.unesco.org/images/0012/001286/128636e.pdf>
- Ramey, C., Campbell, F., Burchinal, M., Skinner, M., Gardner, D and Ramey, S. (2000) Persistent effects of early childhood intervention on high risk children and their mothers. *Applied Development Science* 4:2–14.
- Ravens, J. van, and Aggio, C. (2005) *The Costs of Dakar Goal 4 for Developing and 'LIFE' Countries*. Background paper for EFA Global Monitoring Report. Available online at www.efareport.unesco.org.
- Rouse, C., Brooks-Gunn, J. and McLanahan, S. (2005) Introducing the issue in school readiness: Closing racial and ethnic gaps. *The Future of the Children Journal* 15(1), 5–14.
- Sachs, J. (2005) *UN Millennium Project Report: Investing in Development*. New York, NY: UNICEF.

- Schweinhart, L.J., Barnes, H.V. and Weikart, D.P. (1993) *Significant Benefits: The High/Scope Perry Preschool Through Age 27*. Monographs of the High Scope Educational Research Foundation, Number 10. Ypsilanti: The High/Scope Press.
- UNDP (2005) *Human Development Report 2005*. New York, NY: UNDP.
- UNESCO (2002) *EFA Global Monitoring Report: Is the World on Track?* Paris, France: UNESCO.
- UNESCO (2003) *EFA Global Monitoring Report: the Leap to Equality*. Paris, France: UNESCO.
- UNESCO (2004a) *Early Childhood Care and Education in E-9 Countries: Status and Outlook*. Paris, France: UNESCO.
- UNESCO (2004b) *EFA Global Monitoring Report: The Quality Imperative*. Paris, France: UNESCO.
- UNESCO (2005a) *EFA Global Monitoring Report: Literacy for Life*. Paris, France: UNESCO.
- UNESCO (2005b) *Policy Review Project: Early Childhood Care and Education in Kenya*. Paris, France: UNESCO.
- UNESCO (2006) *EFA Global Monitoring Report: Strong Foundations*. Paris, France: UNESCO.
- UNESCO (2007) *EFA Global Monitoring Report: Education for All by 2015. Will We Make It?* Paris, France: UNESCO.
- UNESCO Institute for Statistics (2006). *Global Education Digest 2006*. Montreal, Canada: UIS.
- UNICEF (2006). *The State of the World's Children 2006*. New York, NY: UNICEF.
- United Nations Committee on the Rights of the Child, UNICEF, Bernard van Leer Foundation (2006). *A Guide to General Comment 7: Implementing Child Rights in Early Childhood*. The Hague, The Netherlands: Bernard van Leer Foundation.
- Vandemoortele, J. and Roy, R. (2004) *Making Sense of MDG Costing*. New York, NY: UNDP.
- Wamahiu, S. (1995) *The Impact of the Integrated Madrassah-Nursery Intervention Programme on the Later School Success of Muslim Children in Mombassa*. Nairobi, Kenya: Aga Kahn Foundation.
- World Bank (2005a) *Early Childhood Education Enhancement Project*. Project Appraisal Document. Washington, DC: World Bank.
- World Bank (2005b). *World Development Report 2006, Equity and Development*, Washington, DC: World Bank.
- World Bank (2006). *World Development Indicators*. Washington, DC: World Bank.
- World Education Forum (2000). *The Dakar Framework for Action. Education For All: Meeting our Collective Commitments*. Text adopted by the World Education Forum. Dakar, Senegal, 26–28 April 2000.
- Young, M. (2002) *From Early Childhood Development to Human Development*. Washington, DC: World Bank.



Annex I: Users' guide for working with the cost estimations model

This report consists of two elements:

- this report, and
- an Excel-file, which should have been sent together with the report but is also available online on the Bernard van Leer Foundation website or from the UNESCO Cairo Office or the authors

This Annex provides an explanation about that Excel file.

The Excel file contains the estimation model that has been developed for this report, as well as all the calculations on which this report is based. The file is made available to the reader because the cost estimations unavoidably require a number of assumptions made by the authors with which the reader may disagree. In case of disagreement, the reader can make his or her own assumptions and alter the relevant parameter in the Excel file accordingly, and observe the consequences this has for the final outcomes. In various parts of the text of the report we make reference to this spreadsheet. In this way we wish to underscore the interactive spirit that we think this estimation exercise should have.

The estimation model is very simple to use, even for people who have not worked with this software before.

In order to change the parameters, please follow these instructions:

1. To see the parameters click on the link 'Go to change the main model parameters' below. You can always come back to this page by clicking on back to presentation.
2. You will then have the choice of revising all the parameters that are in red by clicking the following headings:
 - 2.1. RPD core cost parameters
 - 2.2. Counselling core cost parameters
 - 2.3. Salaries ratios to pcGDP by country
 - 2.4. Total fertility rates by country
 - 2.5. GER Targets by country
3. All figures in red can be altered by typing the desired value (it is not necessary to first delete the old value)
4. These changes will have an immediate impact on the results
5. Note that not all black figures will necessarily be influenced, e.g. changes made in the red figures on the left side of the screen (these concern parameters for the unit costs) do not affect numbers of children to be served.
6. To see how the results change in terms of number of children click on Go to see the scenarios
7. To see how the results change in terms of cost estimates click on Go to see the cost estimates
8. The last sub-file 'population growth' is informative and is used to project population over time.



Annex II: Interpretation of the cost estimates. The case of Yemen

Additional annual cost in a certain year. This gives the additional financial resources needed by a certain year. Table 7.1 presented the additional costs by 2010 and 2015. Those levels are achieved gradually as the figures below show.

$$\text{Additional cost}_i = \text{Costs estimations}_i - \text{Expenditures on ECCE}_{2004}$$

Where:

$$i = 2010, 2015$$

Accumulated additional cost for the whole period per modality

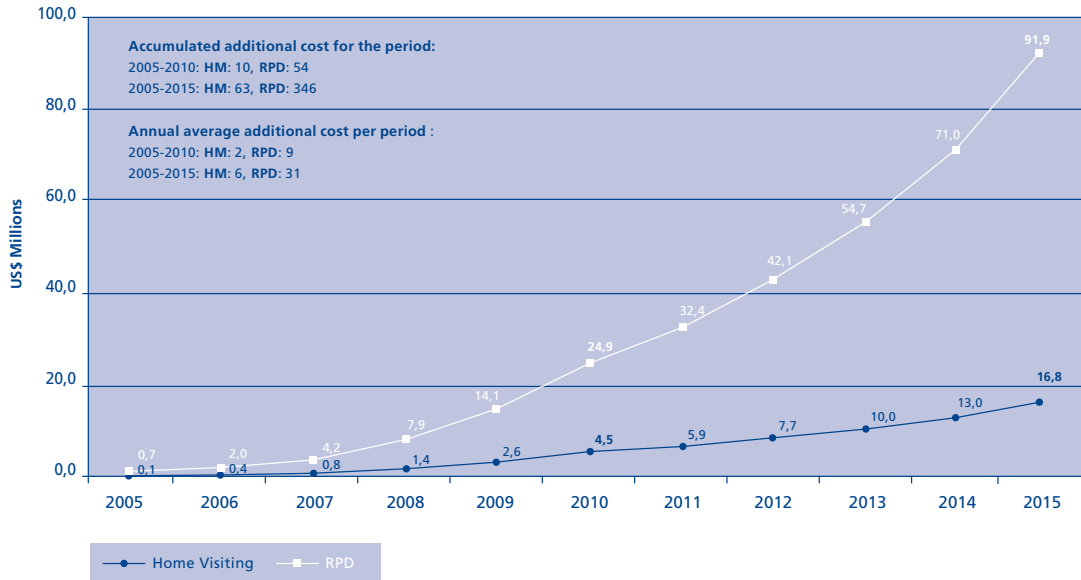
$$\text{Accumulated Cost}_{2005-2010} = \sum_{i=2005}^{2010} \text{Costs estimations}_i - \text{Expenditures on ECCE}_{2004}$$

$$\text{Accumulated Cost}_{2005-2015} = \sum_{i=2005}^{2015} \text{Costs estimations}_i - \text{Expenditures on ECCE}_{2004}$$

Annual average additional cost per modality

$$\text{Annual average additional Cost}_{2005-2010} = \frac{\sum_{i=2005}^{2010} \text{Costs estimations}_i - \text{Expenditures on ECCE}_{2004}}{6}$$

$$\text{Annual average additional Cost}_{2005-2015} = \frac{\sum_{i=2005}^{2015} \text{Costs estimations}_i - \text{Expenditures on ECCE}_{2004}}{6}$$







About the Bernard van Leer Foundation

The Bernard van Leer Foundation funds and shares knowledge about work in early childhood development. The foundation was established in 1949 and is based in the Netherlands. Our income is derived from the bequest of Bernard van Leer, a Dutch industrialist and philanthropist, who lived from 1883 to 1958.

Our mission is to improve opportunities for children up to age 8 who are growing up in socially and economically difficult circumstances. We see this both as a valuable end in itself and as a long-term means to promoting more cohesive, considerate and creative societies with equality of opportunity and rights for all.

We work primarily by supporting programmes implemented by partners in the field. These include public, private and community-based organisations. Our strategy of working through partnerships is intended to build local capacity, promote innovation and flexibility, and help to ensure that the work we fund is culturally and contextually appropriate.

We currently support about 140 major projects. We focus our grantmaking on 21 countries in which we have built up experience over the years. These include both developing and industrialised countries and represent a geographical range that encompasses Africa, Asia, Europe and the Americas.

We work in three issue areas:

- Through “Strengthening the Care Environment” we aim to build the capacity of vulnerable

parents, families and communities to care for their children.

- Through “Successful Transitions: The Continuum from Home to School” we aim to help young children make the transition from their home environment to daycare, preschool and school.
- Through “Social Inclusion and Respect for Diversity” we aim to promote equal opportunities and skills that will help children to live in diverse societies.

Also central to our work is the ongoing effort to document and analyse the projects we support, with the twin aims of learning lessons for our future grantmaking activities and generating knowledge we can share. Through our evidence-based advocacy and publications, we aim to inform and influence policy and practice both in the countries where we operate and beyond.

Information on the series

Working Papers in Early Childhood Development is a ‘work in progress’ series that presents relevant findings and reflection on issues relating to early childhood care and development. The series acts primarily as a forum for the exchange of ideas, often arising out of field work, evaluations and training experiences. As ‘think pieces’ we hope these papers will evoke responses and lead to further information sharing from among the readership.

The findings, interpretations, conclusions and opinions expressed in this series are those of the authors and do not necessarily reflect the views or policies of the Bernard van Leer Foundation.

ISBN 978-90-6195-101-8



9 789061 951018 >