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**Facing the Challenge of
Defining Early Childhood
Development Models that can
be Scaled Up**

**Early Childhood Care and Education
in Sub-Saharan Africa:
Towards expansion of coverage and targeting
of efficient services**

by Alain Mingat

**Working Document
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Early Childhood Care and Education in Sub-Saharan Africa: Towards expansion of coverage and targeting of efficient services

Alain Mingat, December 2005
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1. Introduction

The importance of the interaction between health, education and well-being of children and poverty reduction is gaining recognition by policy makers dealing with international development. Five of the eight Millennium Development Goals relate to health, nutrition and education of young children. These include, halving the percentage of children who suffer hunger, reducing by two thirds the rate at which children under the age of five are dying, cutting by three quarters the ratio of maternal deaths to live births, providing the opportunity to all children to complete primary education, and eliminating gender disparities in schooling opportunities. In addition, the first of the six goals set at the Dakar Forum on Education For All in April 2000 proposes to “*Expand and improve comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children*”.

African governments are also placing an emphasis on improving the status of health and education of children, and in many countries, the Poverty Reduction Strategy Papers (PRSP) goals and targets are aligned with the MDGs. Poor children are likely to grow up to become poor adults and give birth to children who are poor, perpetuating the poverty cycle. In contrast, children are more likely to go to school and perform well if their parents have been educated. Healthy newborns are more likely to be born from mothers who were healthy and well nourished as children and adolescents. The economic, private and social returns on investments in nutrition, health and education early in life, have been demonstrated by Van Der Gaag and Tan (1998); Meyers (1998); and Schweinhart, Barnes and Weikart, (1993). There is not much room for doubt that meeting basic health, nutrition and education needs of young children, is a key element in breaking the poverty cycle.

On average, Sub-Saharan Africa is standing behind other regions on most aspects of the MDGs, especially on indicators regarding the situation of young children. For example, the prevalence of malnutrition of under 5 children is twice that found in East Asia, and almost 4 times of that in Latin America and the Caribbean (LAC). The primary completion rate is not much above half of that in East Asia and LAC; the under 5 mortality rate is almost twice the global average, and four times higher than in LAC and more than 3 times higher than in East Asia. A very similar pattern is found regarding the infant mortality rate, while the rate of immunizations for under 12 month olds is almost double in LAC, and 20 percentage points lower if compared with the global average.

In the Region, the overall enrollment rate for pre-school stands at about 16 %; - 10 % for IDA countries, and in most cases paid by parents contributions¹. These figures compare poorly

¹. It is however to be stressed that, on average and as expected, coverage of preschool tends to be larger in countries with both a higher level of economic development and a larger coverage of schooling (at the primary

with the 28 % observed in Middle East countries, the 36 % in South Asian countries and the 46 % observed on average in Latin America (the average figure is 72 % in OECD countries).

Table 1: The indicators associated to four MDGs in various regions of the World

	Africa, 1990	Africa, 2000	All developing countries, 2000	LAC, 2000	East Asia, 2000
MDG 1					
Population below \$ 1 a day (%)	47.1	48.1		12.1	14.7
Prevalence of child malnutrition (% of children under 5)		26.5		7.6	12.2
MDG 2					
Primary Completion Rate (%)	49	54	77	85	84
Youth literacy rate (% ages 15-24)	67.7	78	85.6	93.9	97.3
MDG 3					
Ratio of girls to boys in primary and secondary education (%)	78.6	79.9	86.5	98.7	89.2
Ratio of young literate females to males (% ages 15-24)	79.8	88.7	91.8	100.8	97.9
Share of women employed in the nonagricultural sector (%)				41.2	
MDG 4					
Under 5 mortality rate (per 1,000)	158.5	161.2	77.8	36.7	45.3
Infant mortality rate (per 1,000 live births)	102.5	91.2	53.8	29	36
Immunization, measles (% of children under 12 months)	64.2	52.9	72.6	93	85

It is however acknowledged that Early Childhood activities are not confined to pre-schooling. It concerns the total well-being and development of the child: emotionally, physically and intellectually, from birth to six years of age, a crucial period in a child's life. The scope of ECCD concerns every child's right to survival, protection, care and optimal development from conception onwards. Taking this into account, successful ECCD interventions provide an integration of health-nutrition, social and cognitive development, with a clear distinction between programs for the 0-3 and 4-6 year olds. At the earlier stages, the limited range of child behavior is more easily supported in home settings, and the main inputs from intervention include parental education, and health and nutrition interventions. From ages 3-6, children are more physically mobile, ready to form relationships with non-family adults and have sufficient language and cognitive development to engage in active interactions out side the home. This favors the center-based or community-based programs.

level in particular). This assertion holds within the Africa region as the average GER for preschool is estimated to stand at only 10 percent in IDA countries (average per Capita GDP of US\$355 and Primary Completion Rate of 45.6 percent), while the corresponding figure is 45 percent in the few non-IDA countries of the region (average per capita GDP of US\$2,880 and Primary Completion Rate of 90.6 percent). This overall relationship between coverage of preschool and that of primary education and level of economic development is yet relatively loose when considering countries within a limited range of per capita GDP, such as the IDA countries. Within this group, there is both virtually no such relationship and wide variations across countries in terms of their coverage of preschool. For example, the two neighboring countries, Gambia and Senegal, have very different figures for the coverage of preschool with a figure of 28 percent in the former country and only 3 percent in the latter. Similarly, Sudan has a preschool GER of 22 percent while the corresponding figure in its neighbor Ethiopia is only 1.7 percent. The comparison between Kenya with a coverage of 38 percent in preschool while the figure in Uganda is 2.9 percent completes the demonstration : Beyond contexts that clearly make the expansion of preschool more likely, there is quite an amount of political will in making decisions about the coverage of pre-school in a given country. On current trends (that observed between 1990 and 2003, it is expected that, out of the 36 IDA countries of the region for which data are available, 32 would not reach a coverage of even 25 % by the year 2015.

ECCD programs target different objectives concerning first the development of the child in its different dimensions and second more specific ones such as to prepare children for entry into primary school or to unburden families from their child care duties during the work day hours.

Finally, it is important to analyze how the Early Childhood development goals be positioned in relation with the other social objectives, in particular in health, nutrition, water and sanitation and education. For the later dimension, it is to be stressed that universal completion of six years of primary education (a Dakar objective as well as an MDG for the year 2015) remains the priority while appearing in itself an objective not easy to reach?

A number of documents have been published to make the case of ECCD (see for example Young, 2002, Hyde and Kabiru, 2003, Jaramillo and Mingat, 2003). A substantial documentation exists also on the type of programs or content of the activities that are undertaken under the generic name of ECCD activities². The main focus of the paper is more on the logistical and financial aspect of ECCD. It is an attempt to provide answers to questions such as: i) what are the main structural and organizational decisions that could be made to implement the MDG and Dakar goals? ii) What would it entail in terms of (human and financial) resources? iii) How could pursuing this objective be financed?

2. The main structural decisions to be made

Under this heading, it may be of interest to discuss the following points: i) articulating specific ECCD activities with those that are undertaken under a social generic umbrella; ii) designing a strategy that maximizes the mix of formal structures and of community based activities; iii) integrating into a global ECCD strategy the activities that are undertaken for the two age groups (0 to 3 and 3 to 6); and iv) managing selectivity in implementation of ECCD activities. The distinction of these four points, made for the purpose of presentation, is somehow artificial since they are partly interrelated.

2.1 Articulating specific ECCD activities with those undertaken in a general perspective

It is probably widely accepted that young children should benefit from an improved, safer and enriched life by reference with what they currently have in most cases in Sub-Saharan Africa. It is also advocated that the activities undertaken towards this objective are many and should be integrated into a single strategy. This being said, one must also recognize that ECCD does not arise in a vacuum and needs to find its place within or in addition of existing structures. In this context, it may be useful to distinguish between activities that are specifically targeted to young children from activities that are important or even essential for young children but that already exist or are not children specific. In the first category we find things such as parental education or preschool while in the second, we find elements such as water and sanitation. Given this distinction the ECCD Strategy is two fold: i) one consists in

². See for example “Early Childhood Counts” edited by Evans, Myers and Ilfeld, 2000; “ECD: Laying the Foundation of Learning”, 1999 (UNESCO publication), the Reflection Series published by The Bernard van Leer Foundation (1992 -2000), or the “Coordinators Notebook” published quarterly by the Consultative Group on ECCD.

identifying the specific activities, designing their implementation and securing their financing, while ii) the second is more a matter of coordination with the different bodies and structures in charge of the other activities in view of maximizing their impact on young children.

2.2 Designing a strategy that maximizes the mix of formal and community based activities

Most of the activities currently undertaken for young children in Sub-Sahara African countries are organized in formal structures, in particular preschools. Albeit scarcer, community-based services also exist, generally organized with the support of NGOs or Unicef. Experience shows that formal structures are i) most often found in urban setting, ii) often times (but not only) operated with private financing, iii) characterized by relatively high unit costs per child³ and iv) benefit disproportionately better-off children. By contrast, community-based activities are found in rural setting and can be characterized by either relatively low or high cost per child if all costs are included in the calculations.

In view of designing a strategy for ECCD, it is useful to document the respective merits of using formal or non-formal (community-based) structures to implement the types of activity under consideration. To this end, costs and outcomes are to be taken into consideration; for example, to what extent do children that attended ECCD programs show better health indicators and which programs appear to provide better results for the cost? Or to what extent do children who went to preschool perform better in primary education (less likely to repeat or dropout, learn better) than those who did not? Finally, what is the balance between the cost incurred and the impact on outcomes and to what extent is preschool a cost-effective strategy given the alternatives to improve educational outcomes in primary education?

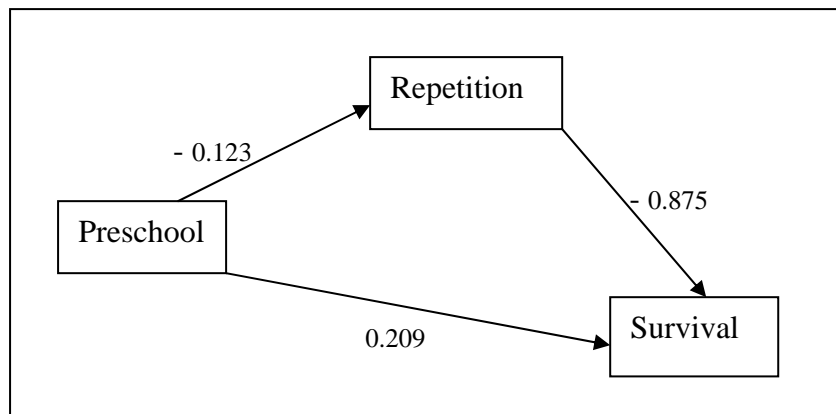
In the African context, data are scanty and if it is possible to get a sense of either the costs or the benefit of some programs, the cases in which both items are available are relatively scarce, and even scarcer are the circumstances when it is possible to contrast cost and benefits of alternative programs. We examine here as an example the case of ECCD and preschool programs upon repetition and survival in the course of primary education. We proceed in two steps: the first consists in establishing that ECCD and preschool programs do have a positive impact upon primary education (for that we rely on international comparative data and analysis); the second consists in conducting a cost benefit analysis of ECCD and preschool services introducing a comparison between services delivered in formal structures and community-based services.

2.2.1 Identifying the impact of preschool from a comparative analysis

This impact has been made on two samples of data: i) all countries of the world for which the relevant data are available (40 countries); and ii) all Sub-Sahara African countries (24 countries). The analysis has been performed using a three equation structural econometric

³. If preschool is concerned, it is found first that on average, unit cost is about 50 percent higher than that of primary education, and second that there exist wide variations across countries as the children-personnel ratio may vary from 15:1 to 47:1 across countries of the region.

modeling. The results are very similar for the two sets of countries. For the African sample, the results can be presented using the following figure.



The estimates show that i) preschool has a negative effect on repetition (a larger coverage of preschool implies lower levels of repetition, with one additional percentage point in Preschool GER implying on average a reduction of 0.12 percentage point in the repetition rate in primary education). This estimate also shows that, for a given level of preschool GER, Anglophone countries are characterized by a frequency of repetition which is significantly lower (by 7.5 percentage points) than that of their Francophone counterparts; ii) repetition has a negative impact upon survival with an elasticity of - 0.875, implying that a reduction of one percentage point in the repetition rate in primary commands on average in African countries an increase of 0.875 percentage point; concerning finally the impact of preschool upon survival in primary education, the total effect is quite substantial, an increase of one percentage point in the preschool GER implying on average an increase in the survival rate to Grade 5 of primary school of 0.317 percentage point. This effect results from two sources: a) an indirect effect through the combined impact of preschool upon repetition and of repetition upon survival; and b) a direct effect (that may represent the impact of preschool on the demand for schooling), which impact is estimated here at 0.209, implying that an increase of 1 percentage point in preschool GER commands an increase of 0.209 percentage point in the survival rate to Grade 5 of primary education.

In order to make these results available in a more concrete manner, they are presented under the form of numerical simulations. Table 7 provides the results obtained.

Table 2: Simulation of the Survival Rate to Grade Five and Repetition Rate According To coverage of Preschool in 24 Sub-Saharan African Countries

Preschool GER (%)	0	10	20	30	40	50	60
Repetition Rate (%)							
All African countries	20.4	19.2	17.9	16.7	15.5	14.2	13.0
Francophone Countries	22.7	21.5	20.3	19.0	17.8	16.6	15.3
Anglophone Countries	15.3	14.0	12.8	11.6	10.4	9.1	7.9
Survival Rate to Grade 5 (%)							
All African countries	65.3	68.5	71.6	74.8	78.0	81.2	84.3

From the data in Table 2, it appears clearly that preschool has quite a positive impact on the performance of student flow in primary schooling. From an initial context of very low coverage of preschool (most African countries are in such circumstances in 2000) to circumstances in which the GER of preschool could reach say 30 percent in 2015 (a goal that seems probably “reachable” in most countries), the anticipated benefits are sizeable: Repetition rates could go down from 20.4 to 16.7 percent while the proportion of primary Grade 1 students that reach Grade 5 would increase from 65 percent in 2000 to 75 percent in 2015. This would mean that i) it would create a context in which the objective of universal completion of six years of primary education has better chances to be met, and ii) it would help improve the efficiency of resource use in the primary cycle of studies. It is estimated that increasing coverage of preschool to 30 percent by 2015 would result in an efficiency gain of 15 percent in resource use in primary education⁴.

2.2.2 To what extent are the benefits of preschool enough to compensate the cost?

The results obtained in the previous section suggest that preschool has a positive impact upon the operation of primary education. However, it is not enough that a positive impact of preschool be identified to justify that such activity be undertaken. In a world of scarcity of resources, the cost dimension needs to be taken into consideration. Three complementary aspects of cost may play a role in this respect: the first is merely linked to financial sustainability; the second is related to cost-efficiency and the relation between spending and expected benefits; the third is that under the common label of preschool, activities may exist with very different content, mode of implementation and finally costs. For this reason, we allow a variation in service delivery, in particular in contrasting formal structures and community-based activities.

i) Financial sustainability

The first aspect has to do with financial sustainability and the competition among alternative claims. For example, within the education budget, the indicative framework of the Fast-Track initiative suggests that 50 % of recurrent spending on education be allocated to the primary cycle (for a six year cycle). If we accept this benchmark, this implies that an other 50 % of the budget is available for all other levels (preschool, lower and upper secondary general and technical education as well as for higher education). If there are good reasons to give more resources to preschool, similar good reasons do exist to provide additional resources to these other segments of the system. One could suggest that external funding could be used for preschool to complement domestic public allocations; but the same argument holds for other sector needs: external financing is also scarce and primary education comes now also into the competition since the donor community has given some kind of priority to the goal of universal achievement of primary education and since this is likely to absorb a significant proportion of their financing.

⁴. This represents quite a substantial amount of resources saved. But it should be stressed that these savings are in a sense “real” or virtuous, since they are obtained in a context where the quality of primary education is not compromised (as it would be the case with an increase in class-size or a cut in the availability of pedagogical materials) but strengthened.

ii) The need to promote cost-efficient services

The second aspect concerns whether the use of additional resources for preschool would be cost-effective and cost-efficient. To what extent are the benefits from preschool high enough to justify additional resource allocations? This issue can be tackled in two complementary ways : a) the first way consists in contrasting directly the benefits of preschool and the costs, the idea being that the former needs be larger than the latter; this would constitute a basic element toward justification but it would remain incomplete since this analysis does not take into account the issue of resource scarcity; b) the second way consists in bringing in the competition for resources and the point would be to demonstrate that investing in preschool is a better strategy than investing in alternative education inputs . Below we present some evidence on the first of these two points.

On the cost side, we know that preschool type activities can be organized in a formal setting or in a non-formal one (community-based activities) and we will see that the costs may be very different. Before turning to the comparison across the two modes of delivery, we focus first on preschool activities delivered in formal structures. We do not have readily available a complete set of data and we provide data on a small sample of countries (table 3, below) with the idea that they provide nevertheless some useful orders of magnitude.

Table 3: Selected data on the cost of public preschool in 4 countries (World Bank sector studies)

Country/ Region	Per capita GDP (000 Fcfa)	Unit cost					Pupil-Teacher Ratio			Ratio a) / b)
		In Fcfa unit		In per capita GDP unit		Preschool / Primary a)	Preschool	Primary	Preschool / Primary b)	
		Preschool	Primary	Preschool	Primary					
Benin, 1998	227	33,200	27,600	0.146	0.121	1.20	28	53	1.89	0.635
Cameroon, 1998	363	50,000	26,000	0.138	0.072	1.92	23	56	2.43	0.790
Côte-d'Ivoire, 2000	464	107,300	49,055	0.217	0.106	2.05	23	43	1.87	1.098
Niger, 1998	105	63,779	36,972	0.608	0.352	1.73	20	39	1.95	0.885
Average 4 countries	-	-	-	0.236	0.139	1.70	23.5	47.8	2.03	0.838
Sub-Saharan Africa	-	-	-	0.170	0.129	1.37	27.2	44.6	1.64	0.838

From actual data on unit cost in both public preschool and primary education in four countries (Benin, Cameroon, Côte-d'Ivoire and Niger), we get the sense that formal preschool can be relatively costly. On average, unit cost in preschool (0.236 times the per capita GDP) in that small sample of countries exceeds that of primary education (0.139 times the per capita GDP) by 70 percent. From other sources (Bruns, Mingat and Rakotomala, 2003) we know that the unit cost of primary education in low income Sub-Saharan countries represents on average around 12.9 percent of the per capita GDP of the countries (while it is estimated at 13.9 in our sample of four countries). We also have at our disposal data on the pupil teacher ratio in both primary education and preschool in our sample and for the region as a whole. PTR is respectively 23.5 and 47.8 in preschool and primary education in our sample, while the corresponding figures for the region are 27.2 and 44.6. These data suggest that, if our sample indeed deviates from the average figures for the region, the overall pattern looks relatively much the same.

In our sample of four countries the ratio of unit costs in preschool and primary education (1.70) is lower than that of pupil teacher ratio (2.05). This implies that teaching staff are on average paid less in preschool than they are in primary education; following this argument, on average, teacher salary in preschool would represent about 81 percent that in primary education; this figure appears reasonable. To estimate the ratio of unit cost in preschool and in primary education for the region as a whole, we use this latter figure (0.81) and recalibrate the ratio found in our sample of four countries according to the ratio of the PTR in preschool and primary education in the sample and in the region. This leads to a ratio of 1.37 between unit cost in preschool and primary schooling, which in turn implies that the average unit cost in preschool could represent about 0.17 unit of per capita GDP.

On the benefits side of preschool, we may distinguish between those that arise during preschool itself and those that arise after the children have left preschool in their subsequent life. On the first count, one can cite that women whose children get to preschool may be freed for productive activity, or that girls whose younger siblings have access to preschool may themselves more easily get enrolled in primary education. On the second count, as a follow up of what we analyze in the previous section, one can cite that children who have benefited from preschool are better prepared for primary schooling; the consequence is that they are less likely to repeat grades and dropout out before completing this cycle of study.

Concerning the impact of preschool on improvement of the pattern of student flow in primary education, we do have a few elements for the analysis. From the estimates presented in table 3, we have the sense that a 50 percent coverage in preschool (which represents an equivalent of 1 year of studies at the preschool level) could imply a gain of 6.2 percentage points in the repetition rate (from 20.4 to 14.2 percent) in primary education and of 15.9 percentage points in the retention rate (from 65.3 to 81.2 percent). These improvements in student flow can be consolidated in a gain of 20 % in the efficiency of resource use in primary education (the ratio of the number of student-years effectively used to the number of student-years required to produce the same number of outputs with no repetition or dropout). Twenty percent of a six year cycle amount to a gain of an equivalent of 1.2 years. Given that the unit cost of preschool is estimated on average to amount to 1.37 times that of primary education, we can conclude that the cost of preschool could be offset for up to 87 percent ($1.2/1.37$) by the expected benefits incurred in the course of primary education.

* If we want **to be positive**, we can conclude that most of the public spending in preschool could be recouped through efficiency gains in primary education; other benefits (in particular in the course of preschool) need not be very important to allow for spending in preschool to get to an acceptable balance between the costs and the benefits. But, if we want **to be less positive**, we can stress that the costs of formal preschool as currently implemented on average in Sub-Sahara African countries are in fact hardly recouped and that in a context of stringent public finance constraints, the priority may not be to allocate substantial additional resources to expand coverage of preschool.

* If we want **to be pragmatic and concrete**, we may want to stress that the calculations made above are based both on average figures and on a mode of delivery of preschool services that may not be the most efficient. One needs to underscore that there exist wide

possibilities to implement preschool activities, both in terms of content, modes of delivery and intensity of inputs per child. It is therefore not totally convincing to base the assessment on a mix of cases some of them being efficient while some others are not. If we could identify the most efficient ways of implementing preschool, they would likely either be less costly and/or generate larger benefits. The results above suggests that the search for efficiency in preschool is not an option and should without doubt be analyzed carefully since the justification for investment in preschool probably rest on the capacity of government to implement preschool activities that are more efficient than average.

From the elements gathered above, it appears that there are arguments that could support the development of ECCD activities in African countries, provided that preschool is organized in an efficient manner. As stressed above, there remains alternative ways by which ECCD activities can be implemented. The range of options is in fact relatively wide along various dimensions, content, institutional setting and financing, unit cost and input mix⁵. Obviously, the magnitude of variability is much larger if we consider preschool activities organized in a formal and a community-based setting. The cost per pupil in community-based activities is likely to be lower than that observed in a formal setting, but what makes a real difference is that preschool in community-based programs are currently only partially subsidized by the government with the consequence that the level of public spending per pupil is generally much smaller than in formal public preschool. In The African context, we have data on community based programs in Cape Verde, Guinea, Guinea Bissau and Senegal. Table 4 provides some basic information.

Table 4: Per child public spending in formal and community-based preschool programs in four countries, around 2000 (per capita GDP units)

Countries	Formal Preschool (a)	Community-Based Preschool (b)	Ratio (a) / (b)
Cape Verde	0.066	0.037	1.78
Guinea	0.073	0.037	1.97
Guinea Bissau	0.117	0.035	3.34
Senegal	0.306	0.057	5.37
Average	0.141	0.042	3.39

Even though these cost estimates can be taken only for reasonable orders of magnitude, the data presented in the table clearly show that community-based programs are largely less costly in terms of public resources than formal public preschool programs (here between 1.8 and 5.4 times less costly) with an average figure of 4.2 percent the per capita GDP. This figure is also in line with the 5 percent of per capita GDP reported for community-based preschool programs in India. The data also suggest that, if there exists a wide variety in per pupil public spending in the formal system of preschool (as already noted above in the Benin,

⁵. We have an idea that formal preschool can be organized in different ways, implying quite different levels of unit cost, when we know that within the Africa region, pupil-teacher ratio does vary between 15 and 47. Within the sample of the four countries analyzed in table 3, the unit cost (expressed as a proportion of per capita GDP) is four times larger in Niger (0.61) than in Benin or Cameroon (0.14). These variations occur within the formal system of preschool.

Cameroon, Côte-d'Ivoire and Niger sample), this seems to be much less the case for community-based programs: all 4 of them are unit cost that are concentrated between 3.5 and 5.7 percent the per capita GDP of the country. This is obviously a good news for the potential public finance sustainability of preschool investments in the context of the stringent constraints that country face for achieving the various Dakar goals for EFA.

However, it is not enough that community-based programs be cheap to justify that they should be expanded. The benefit side also needs to be considered. The data on the benefits of community-based preschool programs are even scarcer, in particular if we focus on the impact of these programs on the frequency of repetition and dropout in the course of primary education. The single factual documentation that we know for the Africa region is the study by Jaramillo and Tietjen (2001) on Cape Verde and Guinea. In that study, the outcome is measured in terms of cognitive (language, basic concepts and readiness for reading) and physical development at the outset of preschool programs both formal and community-based. The results show that, in spite of the relatively substantial difference in per pupil public spending, there is little difference on average in the sphere of outcomes, the community-based programs even tending to outperform formal preschool programs. There is however a substantial variance across schools within both formal and community-based schools suggesting that monitoring the programs upon the results they effectively achieve is not an option and should probably be a necessary ingredient of their design.

The policy implications of these findings are relatively straightforward. Since community-based programs are characterized by unit cost say around 5 percent of per capita GDP, while generating potentially similar levels of outcomes for children, these programs present an estimated cost-benefit ratio that stands at 3.1, implying that the benefits (in spite of the fact that they are probably underestimated) clearly exceed the costs. When comparing this figure with the 0.88 found for formal preschool, there is no doubt that extending preschool activities in a well designed community-based mode is probably to be considered a serious option. In times of stringent constraints on public resources, community-based integrated health, nutrition and early education programs are indeed to be preferred.

This being said, the fact that there is a good potential to implement community-based ECCD services (given its relatively low public cost and the benefits they can generate) does not necessarily imply that all services for young children should use this formula, nor that the formula cannot be implemented in different ways. First, different manners may be thought to implement community services; they may differ in their design and in the type and coverage of the services they offer, but they may also differ in the amount of the contribution required from the community to operate. Implementing community centers is also more relevant in rural settings while more formal structures usually fit better the urban context. But formal structures themselves can be public with possibilities to offer free services or to impose fees to recoup partly the cost in public structures, or private with possibilities for them to be partly subsidized by the State. As a whole, there is a relatively wide range of possibilities and choices have to be made to determine the best mixes and tradeoffs between the objective of providing best quality services and that of providing them to the maximum number of children of the country. The two objectives are obviously contradictory when resources are scarce.

2.3 An ECCD strategy that matches the needs of the 0 to 3 and of the 4 to 6 age groups

Among the different modalities there are roughly two distinguished types of programs: those that target the 0-3 age group, and those that are aimed at the 4-6 year olds.

* Programs for younger children are more focused on parental education and health and nutrition and psycho-social development. These types of programs are rarely center-based. The main audience are the parents, and in most cases the key people in this type of intervention are community leaders trained on health and nutrition and if available psychosocial development⁶.

* On the other hand, the more center-based approach is to better meet the needs of the 4-6 age group; the program currently focuses on socializing the child (cooperating in a group, following discipline and rules) and fostering his (her) cognitive development (spatial and psychomotor abilities, language, coding and transfer of information, ..).

However it is also found, and has proven to be the most effective approach, to have the two programs combined. Often parents of the 4-6 age group have toddlers or infants at home, and parental education and outreach programs conducted out of the center can be more focused and make monitoring easier. In practical terms, the same care takers can both be the teachers of the 4-6 children and provide the relevant education to parents on how to adopt the behaviors that are most appropriate for the harmonious development of their 0-3 children as well as providing them with the relevant materials to this end.

2.4 Managing selectivity in program design and implementation

Selectivity is likely to be a crucial theme in the development of ECCD programs in the years to come in the Africa region. Selectivity arises for two complementary reasons:

* The first is that the expansion of coverage of ECCD services that is called for will by necessity be gradual over time; given that coverage is under five percent in most countries of the region, it implies that universal coverage can only be envisaged in the long run; for a large proportion of countries, achieving a coverage of 25 to 30 percent by 2015 or 2020 would already be a positive achievement. In such circumstances a crucial issue is to determine who will be included and excluded from the program. The experience of health and education systems, where this issue of selectivity has oftentimes been dealt in an implicit fashion, is to be recalled: systems have started to serve the population whose demand was high and for which the logistic was easy; as a consequence services have de facto first been provided to better-off urban children; then, it is when systems have expanded that they have progressively benefited less advantaged population. In 2005, the rural and poor populations make the bulk of those who are still excluded from health and education services (or who benefit from low

⁶ Soucat (2003) argues that 15 years of experience with Minimum Package of Activities in countries such as Mali or Guinea, have demonstrated that actions taken at the household level, such as exclusive breastfeeding and proper feeding practices; home care for common illness including diarrhea and ARI; safe sexual behavior, use of bednets have a significant impact on outcomes such as under-five mortality or nutritional development of children.

quality services); the actual geographical and social distribution of preschool in most countries is an example of such implicit care of the selectivity issue in service delivery. The Dakar goal states that ECCD should be targeted “especially for vulnerable and disadvantaged children”. If the goal is to be taken seriously, ECCD programs need take the selectivity issue in an explicit way, setting criteria in a transparent and positive way and implementing activities accordingly.

The second aspect of selectivity is that not only coverage is concerned but also that services may differ both in nature and in price for the users depending on their characteristics. For example, some countries may decide of a common core of services for all the children of the program but with additional services for a certain segment; for example for those who are in specifically difficult conditions in general or in specific domains (nutrition may be one of them). Similarly, the services may be the same but the degree of subsidization may differ according to particular circumstances; for example, some communities may be asked to contribute (in kind or in money) to the financing of some goods or services (construction of a building to house activities for 4-6 children or remuneration of the community leader in charge of teaching the children or providing advice to parents), while some other (poorer) communities may get these goods and services for free.

Here again, on these two aspects of selectivity, a wide variety of arrangements can be thought of, and structural decisions have to be made so as to design the content and scope of the ECCD program.

3. What do these structural decisions entail in terms of costs?

After having discussed some of the elements that identify the back-bone of the ECCD program envisaged, its costing is not an optional add-on. This step is necessary because one can always dream of fantastic programs but it is of interest to determine the extent to which the envisaged program will remain a nice dream or whether it has chances to become a reality. To this end, two elements need to be brought to reflection; the first is to evaluate its cost, the second is to assess whether adequate resources could be mobilized in order to meet the requirement. The issue of financing is addressed in section 4, below.

The costing is necessary in itself if the promoters of a program want to see it ever implemented; but costing also constitutes an opportunity to better identify what the program is really about. The reason is that to cost a program, one needs to be specific on how it is to operate and how the services are likely to be concretely organized.

* For example, if parental education is concerned for the 0 to 3 age group, it is necessary to identify with enough precision i) who will provide the service? ii) How this person will be trained and supported (then, who are likely to be the trainers and advisers and what would be the cost of their services?)? iii) How many parents is a community leader likely to provide advice? iv) What amount of time this activity would require from him (her)? v) What type of compensation would be necessary to attract candidates and allow an adequate control upon the service provided? and vi) How is the compensation of the community leader to be shared between the beneficiaries (the community) and the program (the State).

* Another example may be the inclusion of a nutrition component in the program. It is important to determine the proportion of the population covered in general by the program that would benefit from the nutrition component; is it the whole population, only 50 percent or 20 percent of it⁷? If there is selectivity, what are the criteria used to identify the beneficiaries? Then, what is the content of the nutrition package and its estimated cost per child covered?

Similar types of specifics on how the services are delivered concern all the aspects envisaged in the program. They could obviously be considered at any stage of the program design but they come in a sense naturally to be discussed at the stage of its costing. It is all the more of interest to consider these aspects at this stage as there is potentially a wide variety of ways by which a given program can be concretely implemented with consequences that can be very substantial on the cost side. For example, assume we consider the case of caring of children 4-6 in a community center. We know as a generic statement that a community leader is to take care of a group of children and needs somehow to be compensated for that service; but depending on how many children she (he) will look after and how much is the compensation, unit cost per child can be differ substantially; then, as the resources are limited, high unit cost will imply low coverage, while a reduction in unit cost allows to admit a larger number of children to the program. At the end, “small logistic decisions” may have very substantial impact on the program itself.

Lets us take a small numerical example to illustrate this case. We assume variation in both the average number of children per community leader and the average level of the compensation; besides we assume that there is no other cost to consider and that the total amount of resources for the program is fixed. Table 5 provides the range of solution that can be achieved, assuming we are in a country which per capita GDP is USD 300 and the annual recurrent budget for ECCD services is one million USD.

Table 5: Hypothetical example of a program with different levels of unit cost and coverage depending on concrete choice in terms of implementation

	Case 1	Case 2	Case 3	Case 4
Compensation of community leader (per capita GDP unit)	0.7	0.7	1.2	1.2
Average number of children per community leader	30	20	20	30
Cost per child (per capita GDP unit)	0.023	0.035	0.060	0.040
Number of children in the program	142 857	95 238	55 556	83 333

Figures in table 5 make it clear that concrete choices, even within a reasonable range, may lead to dramatically different consequences. Between cases 3 and 1, the unit cost varies almost by a factor 3 (2.3 percent of the per capita GDP of the country in case 1, versus 6.0 percent of per capita GDP in case 3), implying that the number of children covered by the

⁷. With the possibility that coverage be universal as far as basic nutrients are concerned but selective when it comes to food supply in specific zones where malnutrition conditions affect the survival of children. Then is the service to be delivered whole year long or only at specific periods during the year (for example to help bridge two consecutive harvesting periods).

program is almost three times larger with the parameters used in case 1 than with the parameters used in case 3, given the budget constraint.

One also has to consider that the relevant description of a national ECCD program is made of a number of services and that, for each of them, there is a number of parameters that come into play. Some services can be dropped or added and each service can be concretely organized in a number of ways. Given this context, it is highly advisable to perform the costing of the program in a structured way that allows variations and derive the cost in a “mechanical” way. For that, the use of a costing model is considered a necessity. The World Bank has designed a standard structure for it, but recent experience in Burkina Faso and the Gambia has shown i) that the structure had to be adapted to fit the national context and the specificity of the program envisaged by each country, ii) that this adaptation was relatively simple to perform and iii) that the tool was a great instrument both to help the national teams (including their international partners) to organize their thinking about the program and identify their key parameters (playing with the model and test the impact on the cost of alternative ways of implementing the services) and to get to cost estimates that are reliable.

4. Is the program affordable? Who is to pay for it? The issue of financial sustainability

The costing of a program (or of alternative programs) is important to perform; but the difficult question is now to determine the extent to which this cost is likely to be met, and if it is possible to find ways by which the activities included in the program can be financed.

Let us remind the reader that only what we named as “specific ECCD activities” are costed and are in search of financing; the “contextual activities” are supposed to be financed using their own sources.

For the ECCD specific activities, two sources can be thought of. The first is within the overall education sector, as preschool is a component of the global system of education. It is obvious that preschool cannot pretend to get a large share of that budget, given the claims to achieve universal primary completion by 2015 and those emanating from secondary education to cope within increasing demands (notwithstanding the claims for technical and vocation education as well as for higher education). However this budget is relatively large (it is generally the first of the country in terms of size), so that even a small percentage of it can help develop preschool services. It is hard to suggest a normative figure for the percentage that would be reasonable. This may obviously depend of the degree of conviction of the policy maker that preschool is a good investment for the country (advocacy obviously plays a role). Preschool being an objective of the Dakar forum, it seems that a commitment of 5 percent of the total recurrent budget of education in 2015 can be considered a reachable target; below 5 percent would not be very consistent with the Dakar goals and beyond 7 or 8 percent is unlikely to happen anyway given the competition between levels of schooling to get resources and the limitation of the resources (domestic and from external aid) available.

However if preschool type of services are obviously present in any ECCD program, these programs also go well beyond preschool. This is why funding beyond the education sector is sought. As it is not easy to identify a particular budget to attach the activities and since they

can potentially be implemented using different mechanisms, it is probably better to simply identify an envelope for the financing of the ECCD program (for its part that is not included in the education budget) and to attach it to the budget of the Ministry of social affairs or that of youth and family or similar depending on national arrangements within the government. In terms of the amount that could be seen as reasonable, again, there is no normative figure. A benchmark of one tenth of a percent of a country's GDP can probably be suggested; this would amount to something like about 5 percent of a typical health budget in a typical Sub-Saharan African country.

Since the two figures cautiously suggested here (target of 5 percent of education budget in 2015 and 0.1 percent of GDP at the same date) are subject to variation from country to country, it is probably safe to analyze the financial sustainability of ECCD programs for different levels of resource mobilization. It is probably useful to stress the sensitivity of the amount of resources for ECCD with small variations in the parameters suggested above. For example, in a typical Sub-Saharan African country, if ECCD gets 4 percent of the education budget and 0.07 percent of GDP, this would mean that the public resources for the ECCD program could amount to 0.21 percent of GDP; but this would be increased by more than 50 percent to reach 0.33 of GDP, if 6 percent of the education budget was devoted to preschool and 0.12 percent of GDP was allocated to the ministry of social affairs for ECCD activities.

To analyze the level of financial sustainability of ECCD programs, an extension of the costing model to resource mobilization is likely to help the national teams. This is a feature of the costing model proposed by the World Bank. With this tool, the national teams are then able to calibrate the ECCD programs that could be proposed to variations in the level of resource mobilization. If the team has determined the best operational arrangements for the production of ECCD services, the adjustment to different levels of resource mobilization entails therefore a variation in the coverage of the population that could benefit the services in 2015. If the resources are really scarce, the national team can also revisit the initial choices and adjust the quality (or some of the characteristics or parameters of service delivery) so as to maintain a minimum level of coverage. The documentation of these tradeoffs is a very important ingredient of the report proposed to the policy maker, helping him (her) to understand what could be gained by increasing marginally the resources or lost in terms of coverage and/or quality of services if the amount of public resources mobilized for ECCD were to be put too much on the low side.

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