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MINIMUM COST OF
'EDUCATION FOR ALL'

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Executive Summary

In 1990, two global conferences set the target of universal access to basic education by the year 2000. Ten years later, it is clear that progress has been too slow in too many countries during the 1990s for the target to be met. Actually, only a fifth of the education promise has been kept since 1990.

There are many reasons for the inadequate progress, and most of them are country-specific. However, one explanation stands out in virtually all countries: inadequate public finance for primary education. The purpose of this paper is to update the global and regional cost estimates for achieving 'education for all' by 2015 — the new target date set by the Social Summit in 1995. The estimates are based on the most recent country-by-country data on budgetary expenditure, population and enrolment trends, and unit cost.

Recurrent expenditure on primary education will have to increase by about \$6.9 billion per year in order to achieve 'education for all' by 2015. Quality improvements will cost an extra \$1.1 billion per year. Reducing the pupil-teacher ratio to an average of 40 is estimated to cost about \$0.5 billion annually. Capital expenditure will add some \$0.6 billion to the global cost.

The annual additional cost of achieving 'education for all' in developing countries by 2015 is estimated at \$9.1 billion (expressed in dollars of 1998). This represents less than one-third of one-tenth of one per cent of world GNP (0.03 per cent) and 0.14 per cent of the combined GNP of developing countries. The global shortfall represents about 11 per cent of what developing countries currently spend on primary education. Thus, 'education for all' is affordable at the global level.

Nevertheless, individual countries will need considerably more resources. In sub-Saharan Africa, 'education for all' will require an extra one per cent of GNP per year. Achieving the education goal in the region will, on average, require a sustained expansion of budgetary outlays on primary education of about 4.3 per cent per year over the next 15 years. In South Asia, an annual increase of 2.7 per cent will have to be sustained.

Currently, sub-Saharan Africa and South Asia account for one-fifth of primary education spending in developing countries; but they account for nearly 60 per cent of the global shortfall for achieving universal education of good quality. In other words, 'education for all' will not be affordable in many countries without external assistance.

But official development assistance (ODA) has declined for most of the 1990s, while the external debt crisis has continued unabated. Moreover, the share of ODA allocated to education has changed little over the past decade, and that for basic education remains extremely low — less than 2 per cent. It has not shown any sign of growth in recent years.

There is no doubt that public spending on primary education includes wastage. But those who argue that existing budgets have to be used more effi-

ciently before more public money is to be invested miss the important point that insufficiencies often create inefficiencies. Most policy-makers do not face a choice between either improving efficiency or increasing budget allocations; both have to be addressed simultaneously.

The global and regional EFA cost estimates do not take into account the implication of the HIV/AIDS epidemic; not because the impact will be insignificant but because its quantification is virtually impossible given current knowledge and available data.

In sum, primary education has not been a priority for many developing and donor countries during the 1990s. Without a major change, the target of universal basic education by 2015 is likely to be missed, just as it was in 2000. Progress toward the education goal represents the single most tangible expression of the commitment to reduce poverty. Without progress in education, few — if any — of the key international development targets in terms of infant mortality, child malnutrition, gender equality, and HIV/AIDS are likely to be achieved by 2015.

Résumé

En 1990, deux conférences mondiales ont fixé à 2000 l'échéance de l'éducation de base pour tous. Dix années plus tard, la lenteur des progrès observés dans de très nombreux pays n'a permis de réaliser qu'un cinquième de l'objectif initial.

Cet insuccès s'explique par nombre de raisons, dont la plupart sont propres aux différents pays. Un facteur est cependant commun à la presque totalité des pays – l'insuffisance des ressources publiques allouées à l'éducation primaire. L'objectif du présent document est d'actualiser, aux échelons mondial et régional, l'estimation des coûts liés à la réalisation de 'l'éducation pour tous' en 2015 – nouvelle échéance fixée en 1995 par le Sommet mondial pour le développement social. Les estimations s'appuient sur les données budgétaires les plus récentes de chaque pays, les tendances observées sur le plan démographique et en matière de scolarisation et enfin les coûts unitaires nationaux.

La réalisation de 'l'éducation pour tous' exigera les augmentations annuelles suivantes : environ 6,9 milliards de dollars pour les dépenses de fonctionnement, 1,1 milliard de dollars pour l'amélioration de la qualité, 0,5 milliard de dollars pour la réduction du nombre d'élèves par maître à une moyenne de 40, et 0,6 milliard pour les dépenses d'équipement.

C'est donc une enveloppe annuelle supplémentaire de 9,1 milliards de dollars (en dollars de 1998) qu'il faudra dégager pour réaliser 'l'éducation pour tous' en 2015, soit moins d'un troisième d'un dixième d'un pour cent (0,03 %) du produit national brut (PNB) mondial ou 0,14 % du PNB cumulé des pays

en développement. Ce déficit représente environ 11 % des dépenses actuelles pour l'éducation primaire dans les pays en développement. 'L'éducation pour tous' donc est abordable à l'échelle mondiale.

Néanmoins certains pays auront besoin de considérablement plus de ressources. En Afrique subsaharienne, 'l'éducation pour tous' exigera une enveloppe annuelle supplémentaire équivalente à 1 % du PNB. Donc, pour assurer l'objectif de 'l'éducation pour tous' les dépenses publiques annuelles consacrées à l'éducation primaire devront progresser, au cours des 15 prochaines années, de 4,3 %. En Asie du Sud elles devront progresser de 2,7 % par an.

Le cinquième des dépenses de fonctionnement que les pays en développement consacrent à l'éducation primaire revient à l'Afrique subsaharienne et à l'Asie du Sud qui, par contre, comptent pour près de 60 % du déficit mondial à combler pour réaliser une éducation de qualité pour tous. C'est dire que, dans de nombreux pays, 'l'éducation pour tous' ne pourra se concrétiser que grâce à un renforcement de l'aide extérieure.

Il reste que l'aide publique au développement (APD) a diminué pendant une bonne partie des années 90, alors que la crise de la dette extérieure a perduré sans répit. De plus, la part de l'APD qui en est allouée à l'éducation n'a guère progressé au cours de la décennie écoulée, se maintenant au taux extrêmement faible de 2 %. Aucun signe de croissance n'a été observé au cours de ces dernières années.

Il n'y a aucune doute que les dépenses publiques allouées à l'éducation primaire souffre d'inefficiences. Mais ceux qui sont de l'avis que les budgets existants doivent être alloués de manière plus efficace avant d'investir des ressources publiques additionnelles négligent un aspect important : généralement des insuffisances génèrent des inefficiences. La plupart des responsables des politiques n'ont pas à choisir entre : soit améliorer l'efficacité, soit augmenter les allocations budgétaires; les deux doivent être traités simultanément.

Les coûts aux niveaux global et régional de 'l'éducation pour tous' ne prennent pas en compte les implications de VIH/sida; non pas parce que l'impact sera sans importance mais parce qu'il est quasiment impossible de le quantifier compte tenu de l'insuffisance des données disponibles.

En définitive, l'éducation primaire n'a pas constitué un objectif prioritaire pour un grand nombre de pays en développement et de pays donateurs, dans les années 90. Si la situation ne se modifie pas radicalement, l'objectif d'une éducation de base pour tous ne sera probablement pas atteint en 2015, tout comme l'objectif n'était pas réalisé en 2000. C'est par le développement de l'éducation que s'exprimera le plus concrètement la volonté d'atténuer la pauvreté. Sans progrès dans le domaine de l'éducation, on ne pourra guère atteindre, en 2015, les principaux objectifs du développement international concernant la mortalité infantile, la malnutrition, l'égalité entre les sexes et le VIH/sida.

Resumen

En 1990, en dos conferencias mundiales se estableció el objetivo del acceso universal a la educación básica para el año 2000. Diez años después, resulta evidente que los progresos realizados fueron sumamente lentos en demasiados países para alcanzar el objetivo. En realidad, en el decenio de los años 90 sólo se cumplió una quinta parte de la promesa en materia de educación.

Existen muchas razones que explican la insuficiencia del progreso y la mayoría de los cuales tiene que ver con la situación específica de cada país. No obstante, hay una explicación que se aplica prácticamente a todos los países: la insuficiencia del gasto público para la educación primaria. El propósito del presente documento es actualizar las estimaciones del costo, en los planos mundial y regional, de la “educación para todos” en el año 2015; la nueva fecha fijada como meta en la Cumbre Mundial sobre Desarrollo Social. Estas estimaciones se basan en los datos nacionales más recientes sobre la matrícula escolar, los gastos presupuestarios, la población y el costo unitario.

Los gastos corrientes en la educación primaria tendrán que aumentar en unos 6.900 millones de dólares al año a fin de alcanzar la meta de la “educación para todos” en el año 2015. Las mejoras en la calidad de la educación habrán de costar unos 1.100 millones de dólares más por año. Se calcula que reducir el número de alumnos por maestro a una media de 40 costará aproximadamente 500 millones de dólares anuales. Los gastos de capital aumentarán el costo mundial en 600 millones de dólares.

El costo adicional anual de la “educación para todos” en los países en desarrollo se calcula en 9.100 millones de dólares (expresados en dólares de 1998). Ello representa menos de un tercio de un décimo del 1 por ciento del PNB mundial (el 0,03 por ciento) y el 0,14 por ciento del PNB combinado de los países en desarrollo. A nivel mundial, la brecha a financiar representa alrededor del 11 por ciento del gasto público en educación primaria de los países en desarrollo. Por consiguiente, la “educación para todos” resulta económicamente factible a nivel mundial.

No obstante, determinados países han de necesitar recursos considerablemente mayores. En el África subsahariana la “educación para todos” corresponderá a un por ciento adicional del PNB anual. Alcanzar el objetivo educacional de la región requerirá un aumento sostenido de los gastos presupuestarios en educación primaria de aproximadamente el 4,3 por ciento anual en los próximos 15 años. En el Asia meridional, será preciso mantener un incremento anual del 2,7 por ciento.

El África subsahariana y el Asia meridional representan la quinta parte de los gastos corrientes en educación primaria en los países en desarrollo, pero corresponden a cerca del 60 por ciento del déficit mundial para alcanzar una educación universal de buena calidad. En otras palabras, en muchos países la “educación para todos” no será posible sin asistencia externa adicional.

Sin embargo, la asistencia oficial para el desarrollo disminuyó en casi todo el decenio de 1990, mientras que la crisis de la deuda externa continuó sin alivio. Además, la porción de la asistencia oficial para el desarrollo destinada a la educación ha cambiado poco en el último decenio, y la parte que se dedica a la educación básica sigue siendo sumamente baja, de menos del 2 por ciento. En los últimos años no se han observado señales de aumento.

Sin duda, el gasto público en educación primaria incluye ineficiencias. Pero aquellos que argumentan que los recursos existentes deben ser usados con mayor eficiencia antes de invertir más dinero público en educación no aprecian un punto importante: la insuficiencia de recursos suele generar ineficiencia. La mayoría de quienes deciden políticas no pueden enfrentar esta situación como una opción entre mejorar la eficiencia o incrementar las asignaciones presupuestales. Ellos tienen que considerar ambas opciones y tratarlas simultáneamente.

Las estimaciones del costo, en los planos mundial y regional, de la “educación para todos” no incluyen los efectos de la epidemia del virus de inmunodeficiencia humana (VIH/SIDA); no porque su impacto sea insignificante, si no porque su cuantificación es virtualmente imposible dada la situación actual de conocimiento y disponibilidad de datos.

En síntesis, en el decenio de 1990, la educación primaria no recibió prioridad en muchos países en desarrollo y países donantes. Si no se modifica esa situación sustancialmente, es probable que no se pueda alcanzar el objetivo de educación básica universal para el año 2015, como no se pudo para el año 2000. Los progresos que se logran con respecto al objetivo de la educación constituyen la expresión más tangible del compromiso de reducir la pobreza. Sin progreso en la esfera de la educación, el cumplimiento de los objetivos claves de desarrollo internacional referentes a la mortalidad infantil, la desnutrición infantil, la igualdad entre los géneros y el virus de inmunodeficiencia humana (VIH/SIDA) serán escasos o inexistentes.

1. Introduction

In 1990, two global conferences — the Jomtien Conference and the World Summit for Children — set the target of universal basic education by the year 2000. Ten years later, it is clear that progress has been too slow in too many countries for the target to be met. Preliminary data suggest that the net primary enrolment ratio in developing countries increased by only 5 percentage points, from 78 in 1990 to 83 in 2000. This means that just over a fifth of the education promise was kept in the 1990s.

In 2000, about 120 million school-age children were not enrolled in primary education — which was more than in 1990. One in every three children in developing countries did not complete 5 years of primary education, the minimum required for achieving basic literacy. These children will join the ranks of the 1 billion adults who cannot read or write. Widespread illiteracy is a source of deepening poverty, rising inequality, and slow economic growth. Countries cannot expect to integrate into global markets without equipping their people with basic skills. Basic education does just that.

Education is also the key to unlocking positive externalities and synergies. Primary education of good quality is unquestionably the key to reducing poverty. It gives a young woman a sense of personal empowerment and self-confidence; she is likely to marry later, space her pregnancies better, seek medical care for her child and herself when needed, and provide better child care and nutrition. Evidence shows that babies born to mothers without any formal education are at least twice as likely to suffer from malnutrition or die before age 5 than are babies born to mothers who attended school beyond primary education (Bicego and Ahmad, 1996). An educated girl is also the best guarantor that her children attend school — all important factors in putting an end to the inter-generational transmission of poverty. Education also enhances her income-generating capacity and emboldens her to promote the enjoyment of her rights and those of her children and to claim support to protect them. Therefore, girls' education is a 'best buy'.

Basic education is also a fundamental human right; perhaps the most human of all human rights because it is reading and writing that sets human beings most apart from other creatures. If poverty reduction is a priority, then all children must get a good start in life. That includes access to basic education of good quality.

There is no good reason why universal primary education has not yet become a practical reality. It does not require new technologies or better science. Neither does it have to wait for strong economic growth. The extra costs for achieving universal primary education is affordable, even in many low-income countries.

There are many reasons for the limited and uneven progress made during the 1990s. Many of them are country-specific. However, one explanation stands out in virtually all countries: inadequate public finance for primary

education.¹ A related factor is the attempt in many countries to shift the cost of primary education to households and communities. Both points warrant an assessment of the financial gap that needs to be closed to reach universal primary education by 2015.

Since 1990, several attempts have been made to estimate the total public cost of universal primary education in the developing world.² Colclough (1993) estimates that achieving a gross primary enrolment ratio of 100 or more would require an additional annual public expenditure of \$5-6 billion during the 1990s (expressed in 1986 dollars).³ Lassibille and Navarro Gomez (1990) present a slightly higher estimate, at \$7.2 billion (in dollars of 1985), or 0.13 per cent of GNP of developing countries. Another global estimate of seeing all children complete primary schooling by 2015 would cost an additional \$19 billion compared to expenditure levels of 1995 (expressed in 1994 dollars).⁴

The wide range between cost estimates stems from differences in goals, target dates, base years, methodologies and underlying population and enrolment data. The purpose of this short paper is to update the global and regional cost estimates for achieving universal primary education by 2015, the new target date set at the Social Summit in 1995. The estimates are based on the most recent data on budgetary expenditure, population and enrolment trends, and average annual cost.

2. Measuring the Goal

The goal of universal basic education can be measured in different ways. We believe that the attendance rate is the best measure. It is a more accurate indicator than the enrolment ratio because it counts the children who are actually attending classes, not just those enrolled in school at the beginning of the academic year.⁵ But attendance rates are monitored in only a few countries.⁶ Therefore, the net enrolment ratio (NER) appears as the second-best indicator.

The NER measures the proportion of children 6-11 years who are enrolled in primary school. Cost estimates based on the net enrolment ratio will not take into account the cost of educating over-age children, which are included in the gross enrolment ratio (GER).⁷ The GER is often above 100 due

1 According to the Convention on the Rights of the Child, the state must ensure free primary education to all (article 28). Even if the private sector is one of the providers of primary education, it is the obligation of the state to ensure adequate funding for universal primary education.

2 Household expenses for private tuition, out-of-pocket costs and the opportunity costs are usually not included in global and regional cost estimates.

3 The estimate is based on country-specific data regarding unit costs and additional enrolment.

4 World Bank memo prepared for 1995 Beijing conference.

5 In most cases, the attendance rate is lower than the net enrolment ratio (UNICEF, 2000).

6 Relevant data on school attendance are collected by the Demographic and Health Surveys (DHS) and the Multiple Indicators Cluster Surveys (MICS).

7 GER are useful to estimate how much is being spent per enrolled child.

to the fact that students are either too old or too young. A GER of more than 100 does not necessarily mean that all children in the age-cohort 6-11 attend or are enrolled in primary school.

Because the GER can exceed 100, we prefer to base the cost estimate of universal primary education on the NER, which cannot exceed 100. Using NERs enables us to estimate the cost of the number of additional school places required to achieve the goal by an agreed target year. Estimating the minimum global and regional cost of reaching NER of 100 by 2015 is the objective of this paper.

3. Unit Costs

The cost of one year of primary education varies greatly from country to country. The UNESCO statistical yearbook indicates that public expenditure on education in 1994 ranged from \$28 per capita in sub-Saharan Africa to \$1,179 per capita in industrialized countries. As a percentage of GNP, however, public expenditure on education varies much less among nations. Regional averages range between 3 and 6 per cent. Therefore, the unit cost of one year of primary education is best expressed as a percentage of per capita income, i.e. dividing public spending on primary education by the number of students and expressing this number as a percentage of GNP per capita.⁸

Relative costs are more meaningful than absolute ones because the principal cost item consists of teachers' salaries. That cost item is related to the level of economic development of the country (Carnoy and Welmond, 1997). As the level of development increases, the labour cost of teachers increases in absolute terms, although not necessarily in relation to average income. Parents will also ask for higher quality education which will increase the level of qualification of teachers, so as to further add to the unit cost. Therefore, a relative cost estimate is preferable to an absolute one.

It is often the case that countries with high enrolment deficits have relatively low levels of income. If global or regional absolute unit costs were used to estimate the cost of universal education in such countries, a serious over-estimation would result because a high unit cost would be applied to the many children in low-income countries who are not attending school but where the absolute cost per pupil is relatively low.

It is thus important not to use global or regional average unit costs for estimating the resource requirements for reaching universal primary education.

⁸ This might under-estimate the unit cost if many children attend private schools. UNESCO data suggest that private enrolment is significant in several countries. However, this is often due to the classification of state-aided schools as private schools when they are managed by private organisations. In reality, there are very few countries where the percentage of children who attend privately-funded primary schools is significant. Consequently, our unit costs derived from UNESCO data do not lead to a substantial under-estimation that could be caused by variations in the public-private breakdown of primary enrolment.

In East Asia, for example, the average unit cost per pupil was estimated at \$254 in the mid-1990s, but this was three times larger than the unit cost in the Philippines, 12 times the unit cost in Viet Nam, and 15 times the unit cost in Myanmar and in Democratic Republic of Korea.⁹ In Madagascar, Uganda, and the Democratic Republic of Congo, unit costs were estimated at less than 15 per cent of the regional average for sub-Saharan Africa.

Applying regional average unit costs to the number of children that need to be enrolled in low-income countries would overestimate the cost of universal primary education. Thus, cost calculations must be based on country-by-country unit costs to avoid that regional and global aggregates are not unduly inflated.

The present cost estimate uses country-specific unit costs whenever possible. In the cases where no country-specific unit cost is available, that for a similar country in terms of per capita income in the same region or sub-region is used. The unit cost is expressed as a ratio of per capita income. It is assumed to remain constant for the 15-year period for which the cost estimates apply.¹⁰

Unit costs refer to recurrent and capital costs separately. They do not incorporate the cost of teacher training or the cost of increased secondary school places as more children will complete elementary education.

4. Average Gains, Marginal Losses

Efficiency gains can reduce the cost of achieving universal primary education. It is beyond dispute that inefficiencies in public spending are a reality. A considerable amount of public spending on education, for instance, covers the cost of repeaters. In some countries, repeaters represent up to a fifth of the children enrolled in primary education. Avoiding or reducing repetition would free a substantial part of the recurrent budget for new school places.¹¹ In terms of capital expenditure, utilisation of local construction materials and labour from voluntary community involvement can considerably reduce the cost of building schools (World Bank, 1995, and Mehrotra and Vandemoortele, 1997).¹² A common source of inefficiency is the under-utilisation of teachers, especially in urban areas.

9 These four countries account for close to 60 per cent of the child population of the region (excluding China and Indonesia).

10 No attempt to forecast economic growth for each country for the next fifteen years was made because it would distort and inflate the minimum cost estimate. Given the uncertainties involved, we assume constant per capita income. In doing so, the total cost of education can be compared to current income to assess the country's burden to achieve universal primary education.

11 Automatic promotion is one possible way to avoid repetition.

12 This is different from community participation. As was mentioned in footnote 1, States Parties have the obligation to ensure universal basic education. Consequently, private costs are not included in this global estimate. It would not be accurate to argue that "community participation" could take care of the capital costs. This kind of cost shifting is not a saving, but simply a transfer from government to communities and households.

On the other hand, educating disadvantaged and marginalised children is likely to be more costly than educating those who are currently in school. The capital cost in regions with low population density is likely to be higher than in urban areas. In some cases, boarding will add to the recurrent cost. Thus, estimating the cost of universal primary education based on average unit costs will inevitably lead to a considerable under-estimation.

For lack of relevant and reliable information, we assume that these two elements — falling average costs and increasing marginal unit cost — will compensate each other. In other words, increasing costs for reaching the unreached children in society will, at least in part, be financed through measures that reduce average costs through efficiency gains.¹³ Admittedly, these two factors will not exactly neutralise one another, but there are no good data or solid grounds on which to base a meaningful quantification of their cost implications.

In this paper, we opt for an estimated cost that does not incorporate efficiency gains and rising marginal unit costs. We do this to keep the number of assumptions on which regional and global estimates are based to a minimum. More assumptions inevitably lead to less clarity, without necessarily making the margin of error any smaller.

5. Methodology

Two methods can be used to estimate the cost implications of achieving universal primary education. The first one is to calculate the number of school children in the year 2015, assuming that all 6-11 year old children will be enrolled. By multiplying that number by the country-specific unit cost, the public cost of universal primary education is obtained. The subtraction of current expenditure will give the additional cost for reaching universal primary education. This “point-to-point” method indicates how much more money will be required in the year 2015 compared with 2000 to achieve the goal of universal primary education.

The second method calculates the costs on an annual basis. It indicates the average additional amount that will have to be spent every year to gradually create a sufficient number of school places by 2015 to ensure universal primary education. Since the second method averages the cost over a 15-year period, it results in a considerably lower estimate than the first one. The latter method yields a more realistic indicator of the additional cost implications for reaching the education goal by 2015.

In this paper, we adopt the second method. We use the most recent country-specific NERs to estimate the number of enrolled children in 2000. The number of children in school is computed by applying the latest NER to the

¹³ Colclough and Al-Samarrai (2000) estimate that the cost of the reforms required to increase quality can be compensated by cost saving activities.

projected number of children (ages 6-11) for every year between 2000 and 2015.¹⁴ This gives the baseline against which to compare the additional enrolment required for achieving universal primary education.

The next step is to estimate the annual number of enrolled children as the NER gradually approaches 100. We assume that in each country the NER will increase in a linear manner every year from its current level (applied to the year 2000) to the level of 100 in 2015. We multiply the NER with the projected number of children 6-11 in each corresponding year, which gives us the number of school children that need to be enrolled each year in order to gradually achieve universal primary education by 2015.

Then, we calculate the number of additional school places required each year to gradually reach NER of 100 by 2015 by subtracting from the projected number of children age 6-11 the number of those children that would be enrolled had the NER remained unchanged.

Next, the number of additional children is multiplied by the country-specific unit cost to obtain the additional cost — relative to the year 2000 expenditure level. Finally, the additional costs are added for each country and for each year, and divided by 15 to arrive at an average annual additional cost of achieving universal primary schooling at the regional and global levels.

6. Data Availability

The application of this procedure is up against the fact that NERs, attendance rates, and unit costs are not available for all countries. Countries can be classified in four groups according to whether data on NERs and unit costs are available. The four groups are: i) countries for which both NER (or attendance) and unit costs are known, ii) countries for which NER is not known but unit costs are available, iii) countries for which NER is available but unit costs are not known, and iv) countries for which neither NER nor unit costs are known.

Table 1 summarises the composition of this 2x2 matrix. Of the 128 developing countries (i.e. all developing countries except a few small island states not included for lack of data), NERs and unit costs are available for 90. They comprise about 500 million children 6-11 years of age, or slightly over 80 per cent of the relevant child population. Less than 6 million children, or 1 per cent of the children in the developing world, live in the five countries for which neither NERs nor unit cost are available. There are another 33 countries for which either the NER or the unit costs are unknown.

For countries without unit cost data, we use information from similar countries in terms of per capita income in the same region or sub-region. When neither NERs nor attendance rates were available, which was the case in only nine countries, an estimate was based on the GER.

¹⁴ Projections by the UN Population Division are made for age-cohorts with 5-year intervals. We use linear interpolation to transform the estimates for the 5-9 age-cohorts into the 6-11 age-bracket.

Table 1: *Availability of information on country-specific NER and unit costs*

	Unit Cost Known	Unit Cost Unknown	All
NER Known	90 countries 512m children (82.2%)	29 countries 102m children (16.3%)	119 countries 614m children (98.5%)
NER Unknown	4 countries 3m children (0.5%)	5 countries 6m children (1.0%)	9 countries 9m children (1.5%)
All	94 countries 515m children (82.7%)	34 countries 108m children (17.3%)	128 countries 623m children (100.0%)

Sources: UNESCO, Statistical Yearbook 1998 and World Education Report 1993, 1995, 1998; UNICEF, State of the World's Children Report 2000; Calculations from UN Population Division.

7. Enrolment Deficit

We use the most recent estimation of the net enrolment ratio, based on UNESCO data, to estimate the number of out-of-school children that will need to be absorbed in the educational system over the next 15 years. Table 2 shows that by 2015, primary schools in developing countries will have to accommodate 170 million more children than in 2000 — an increase of nearly a third.

The steepest increase in enrolment will be needed in sub-Saharan Africa and South Asia. The two regions combined account for over 80 per cent of the additional school places required at the global level. Each region will have to enrol over 60 million additional students by 2015. This is equivalent to almost a 40 per cent increase in South Asia and roughly a doubling in sub-Saharan Africa. This amounts to some 4 million additional children to be enrolled each year in these two regions, which is about twice the growth in primary enrolment observed during the last 5-10 years.

In estimating the cost implications of the global goal of universal primary education, it is common to highlight the importance of the nine countries that attended the 'education for all' conference in New Delhi in 1993 — the so-called 'E-9 countries'.¹⁵ The number of additional children to be enrolled by 2015 in the E-9 countries is approximately 70 million, representing more than 40 per cent of the total number of children who need to be added to current enrolment in developing countries by 2015 if the goal of universal primary education is to become a reality.

Overall, enrolment in E-9 countries in 2015 will have to be one-fifth above the level of 2000 to achieve full enrolment. It is noteworthy that China

¹⁵ The E-9 countries are among the most populous countries in the world and represent about two-thirds of the world's children between 6 and 11 years of age. They comprise Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan.

and Mexico will not need to create additional school places, due to the demographic transition and their already high enrolment ratio. Nigeria, Pakistan, and Brazil, on the other hand, will have to increase primary enrolment considerably between 2000 and 2015 — by 98, 66 and 36 per cent respectively.

Table 2: *Additional school places required to reach NER of 100 by 2015 (by region and for the E-9 countries)*

Region/Country	NER (latest year available)	Additional enrolment by 2015 (‘000)	Additional enrolment by 2015 (% of enrolment in 2000)
Sub-Saharan Africa	55	75,637	101
South Asia	71	61,097	36
East Asia and Pacific	99	6,198	3
Middle East and North Africa	81	16,665	36
Latin America and Caribbean	87	6,872	10
Eastern Europe and Central Asia	91	3,287	21
Total	84	169,756	29
E-9 countries	81	69,111	18
of which: Bangladesh	62	6,053	36
Brazil	94	1,052	5
China	100	0	0
Egypt	80	1,821	19
India	68	33,286	27
Indonesia	97	258	1
Mexico	100	0	0
Nigeria	59	12,553	98
Pakistan	67	14,088	66

Sources: As for Table 1

8. Recurrent Costs

Before estimating the additional recurrent cost of universal primary education, it is necessary to start by estimating how much countries currently allocate to primary education. Although information on actual public expenditures on primary education is not available for all countries, we use the data presented in the UNESCO Yearbook to approximate it.¹⁶

According to UNESCO data, developing countries spend nearly \$200 billion per year on education (data refer to the mid-1990s). Approximately 88 per cent of it is allocated for recurrent items, leaving about 12 per cent for investment purposes. Around 48 per cent of recurrent expenditure is allocated to primary education. Thus, total public spending on primary education is estimated at slightly more than \$80 billion per year. This is equivalent to an aver-

16 UNESCO presents several relevant expenditure ratios per country. They include: (i) the share of total public education spending in GNP; (ii) the share of total public spending on education in total government spending; (iii) the breakdown between recurrent and capital expenditure for total education expenditures (all levels) and (iv) the share of recurrent public education expenditure allocated to primary education.

age of 1.9 per cent of total income. Regional averages range between 1.2 and 2.5 per cent (Table 3). The highest percentage is in the Middle East and North Africa, while East Asia and the Pacific has the lowest percentage. Sub-Saharan Africa, South Asia and Latin America and the Caribbean allocate about 2 per cent of GNP to recurrent expenditure for primary education.

The estimate of \$81.5 billion can be compared with the amount obtained

Table 3: *Estimated recurrent spending on primary education in developing countries (by region, US dollars of 1998)*

Region	Total education spending (recurrent and capital, all levels) (\$ billion)	Recurrent expenditure on education as share of total education expenditure (%)	Recurrent primary expenditure as share of total recurrent education expenditure (%)	Recurrent primary education expenditure (\$ billion)	Recurrent primary education expenditure as share of GNP (%)
Sub-Saharan Africa	16.3	87	48	6.8	1.9
South Asia	16.9	84	58	8.3	1.9
East Asia and Pacific	52.0	89	44	20.3	1.2
Middle East and North Africa	27.5	90	52	12.9	2.5
Latin America and Caribbean	72.1	92	46	30.2	1.8
Eastern Europe and Central Asia	7.1	93	46	3.0	1.6
Total	191.9	88	48	81.5	1.9

Sources: Calculated from *Statistical Yearbook* (UNESCO) and World Bank. (1998)

by multiplying country-specific unit costs by the number of children currently enrolled in primary schools. This gives us an aggregate spending figure of \$82.3 billion. Although the two figures are not identical, they are close enough to make us confident that \$80 billion is a reasonable order of magnitude for recurrent annual expenditure on primary education in developing countries.

Next, we estimate the extra cost for achieving a NER of 100 as described above. The regional breakdown, as well as the estimates for the E-9 countries are shown in Table 4. We estimate the extra recurrent cost of achieving NER of 100 in all developing countries by 2015 at approximately \$6.9 billion per year (expressed in US dollars of 1998). The country-by-country estimates are given in Annex I. Although these estimates are used to arrive at the global and regional estimates, it is obvious that some country estimates are more accurate than others. To some extent, the aggregate cost at the regional and global levels will offset some of the country-level inaccuracies because errors of over-estimation and under-estimation will partly neutralise each other. We reiterate that the main purpose of this paper is to estimate the global and regional costs of achieving universal primary education by 2015. Several country estimates are not robust and detailed enough to be used individually.

Table 4: *Estimated additional recurrent cost for reaching NER of 100 by 2015 (by region, US dollars of 1998)*

Region/Country	Additional recurrent expenditure required		
	Average annual amount (\$ million)	Cumulative increase in 2015 compared with 2000 expenditure levels	Annual increase required between 2000 and 2015 (%)
Sub-Saharan Africa	1,761	54%	2.9%
South Asia	1,611	36%	2.0%
East Asia and Pacific	306	2%	0.2%
Middle East and North Africa	1,885	33%	1.9%
Latin America and Caribbean	782	6%	0.4%
Eastern Europe and Central Asia	604	27%	1.6%
Total	6,949	18%	1.1%
E-9 countries	2246	20%	1.1%
of which: Bangladesh	68	36%	2.1%
Brazil	156	6%	0.3%
China	0	-	-
Egypt	199	19%	1.2%
India	1,004	27%	1.6%
Indonesia	25	1%	0.1%
Mexico	13	-	-
Nigeria	332	98%	4.7%
Pakistan	449	66%	3.5%

Sources: As in Tables 2 and 3 and own calculations

Table 4 expresses the extra annual recurrent expenditure required to reach universal primary education, and the cumulative increase in 2015 compared to expenditure in 2000.¹⁷ Sub-Saharan Africa's average annual recurrent expenditure on primary education will have to be 54 per cent higher in 2015 than it was in 2000 in order to reach universal primary education.¹⁸ South Asia will have to achieve an increase of a more than third. In East Asia and Latin America, by contrast, spending in 2015 will have to be only slightly above the 2000 level (2 and 6 per cent respectively). By 2015, spending on primary education in the Middle East and North Africa will have to be a third higher than current levels.¹⁹ Globally, public expenditure will have to be about a fifth higher in 2015 compared with its level in 2000.

17 In Mexico, the number of children 6-11 is expected to increase but then decline. This implies that for a few years expenditure will need to increase compared to current levels, but public spending on primary education in 2015 will not have to be higher than in 2000.

18 This proportion is similar to the findings in Colclough (1993). Other regions are defined differently and cannot be compared.

19 The reason why the Middle East and North Africa requires a relatively large amount of extra resources, while its enrolment deficit is relatively small, is due to the relatively high absolute unit costs, which are on average much higher than in sub-Saharan Africa and South Asia.

However, this increase has not to occur overnight. Given the gradual approach to reach a NER of 100 described above, these increases will be implemented over a 15 year period. The last column in Table 4 indicates the average annual increase in real recurrent expenditure on primary education that will have to be sustained over the next 15 years if all children are to be enrolled by 2015. They range between 2.9 per cent in sub-Saharan Africa to only 0.2 per cent in East Asia and the Pacific. On average, public expenditure on primary education at the global level will have to increase by about 1.1 per cent per year between 2000 and 2015. This is considerably higher than the rate of growth that was observed in the 1980s and 1990s.

9. Improving Quality

Given that the quality of primary education leaves considerable room for improvement in most developing countries, global and regional cost estimates must include the cost of improving quality. When primary education is of poor quality, children are unlikely to attend and complete primary school. Indeed, reaching universal primary education will require additional outlays for quality-enhancing measures. Therefore, it cannot be assumed that the cost of reaching NER of 100 can be disassociated from the cost of improving quality. Issues of quality and quantity in primary education are intimately connected.

However, we face inadequate data and a host of measurement problems that cloud the quantification of the quality aspects of education. The cost of quality-enhancing measures is basically unknown. Some of them will have little or no cost implications, while others may prove to be quite costly. Quality-enhancing measures will generally include reducing pupil-teacher ratios,²⁰ more teaching materials and textbooks,²¹ more participatory school management, increases in real wages and salaries for teachers, etc.

Based on individual country studies, Colclough and Al-Samarrai (2000) find that all countries need additional materials, with some of them requiring subsidies for girls' education and improvements in teachers' quality. In some cases they also recommend reducing the pupil-teacher ratio to 45.

Quality education implies that a minimum share of recurrent expenditure is allocated to teaching materials, teachers' training, and other quality-enhancing inputs. There is no global formula for a balanced proportion between the wage and non-wage components of recurrent expenditure. UNESCO publishes country-specific data on recurrent primary education by purpose (UNESCO, 1997 and 1998). Data for 77 countries show that in sub-Saharan

20 The implications of reducing pupil-teacher ratios to various target levels, and the options for containing the concomitant costs, are explored in Mehrotra and Buckland (1998).

21 For instance, Colclough (1993) proposes a minimum of \$5 per child in school materials. Although this is higher than actual expenditures in most low-income countries, it may still be inadequate for middle-income countries.

Africa, South Asia and the Middle East and North Africa, an average of 95 per cent of primary recurrent expenditure are allocated to emoluments. In East Asia and the Pacific, the average percentage is 90; and it falls to an average of 86 per cent in Latin America and the Caribbean (Table 5). In industrialized countries, the average percentage is 82.²²

Table 5: *Additional spending to enhance quality of primary education (by region, US dollars of 1998)*

Region	Recurrent primary education expenditure (\$ billion)	Required additional average annual spending (\$ billion)	Share of non-wage spending in recurrent primary expenditure (%)	Additional annual spending to increase quality (\$ billion)
Sub-Saharan Africa	6.8	1.8	5	0.3
South Asia	8.3	1.6	5	0.3
East Asia and Pacific	20.3	0.3	10	0.1
Middle East and North Africa	12.9	1.9	5	0.3
Latin America and Caribbean	30.2	0.8	14	0.1
Eastern Europe and Central Asia	3.0	0.6	n.d.	n.d.
Total	81.5	6.9	7	1.1

Source: Tables 2, 3 and 4; UNESCO Statistical Yearbook (1997 and 1998)

A high percentage of emoluments implies fewer resources for teaching materials and other quality-enhancing inputs, thus lowering the quality of education. In order to ensure minimum quality, we assume that at least 15 per cent of recurrent expenditure should be available for non-wage inputs. This rule of thumb is based on the proportion spent by industrialized countries on items other than emoluments. As indicated before, a relative cost estimate for quality-enhancing measures is preferable to an absolute cost estimate.

Thus, unit costs are adjusted accordingly to incorporate the cost of quality education. In other words, unit costs are increased by 12 per cent for sub-Saharan Africa, South Asia and the Middle East and North Africa. They are increased by 6 and 1 per cent for East Asia and Latin America respectively.

This adjustment applies also to current expenditure, because the quality of primary education has to be improved for all pupils, not only for the additional school places. This cost is annualised by spreading it over a 15-year period since we assume that quality will improve gradually, similar to our assumption that the coverage will expand gradually to reach NER of 100. This amounts to \$1.1 billion per year, the bulk of which will need to be spent in sub-Saharan Africa, South Asia and Middle East and North Africa.

²² There are no data for the Eastern European and Central Asian developing countries, so they are not included. Because their share in total recurrent expenditure, as estimated for 2000, is less than 5 per cent, their omission will not substantially affect our global estimates, including the capital cost (see below).

Reducing the pupil-teacher ratio is an important element of improving the quality of education. Its reduction from current levels to a maximum of 30 (without considering the training costs) would add about 15 per cent of our estimate of the additional annual recurrent costs. However, the more modest objective of reducing the current pupil-teacher ratios to an average of 40 would add about a third of this amount, or \$0.5 billion dollars, as considerably fewer countries would be involved (Mehrotra and Buckland, 1998). The additional cost would apply mainly to sub-Saharan Africa, where many countries currently have, on average, more than 40 students per teacher. Outside of sub-Saharan Africa, it would apply only to a few Asian countries.

Because increasing the number of teachers is crucial for increasing quality, and sustaining the rise in enrolment, the annual costs have not been spread over a 15-year period. We do not assume that the target pupil-teacher ratio of 40 will be reached gradually by 2015. Instead, a once-and-for-all jump in the number of teachers has been assumed.

Table 6: *Estimated cost of reducing average pupil-teacher ratio to 40 (US dollars of 1998)*

Region	Additional number of teachers ('000)	Additional annual cost (\$ million)
Sub-Saharan Africa	122.6	219
South Asia	189.3	311
Total	311.9	530

Source: Mehrotra and Buckland (1998) and own calculations

In all, quality-enhancing measures add some 20 per cent to recurrent expenditure. Some might see it as too little compared with the formidable challenge of improving the quality of primary education. Others might see it as a confirmation that small insufficiencies can lead to large inefficiencies; and that the impact of extra expenditure at the margin can be significant.

10. Capital Costs

So far, the global and regional cost estimates only refer to recurrent spending. There is little information on the capital cost of primary education. Partial evidence shows that, on average, a tenth of overall education expenditure is allocated to capital spending. Of the 99 countries for which relevant data are available, only 15 spent over 20 per cent on capital outlays, whereas 22 spent 5 per cent or less for school construction.²³

²³ These numbers are for the latest available year. We found little change in the 50 countries for which there are trend data. Some countries spend consistently above average, while others below average; but wide fluctuations are uncommon.

In countries where the gross enrolment ratio is above 100, it can be assumed they have enough school places for achieving the goal of universal coverage. Even countries with low enrolment ratio could teach children in multiple shifts, thus avoiding the need to incur higher capital expenditure.²⁴ On the other hand, the gross enrolment ratio can be high, but the regional distribution of facilities can be such that more buildings and classrooms will be needed to achieve universal primary education by 2015. Also, the gap between boys and girls can indicate that additional construction will be required — such as separate lavatories — to reduce the restrictions on girls' enrolment.

Countries can be classified in three groups.²⁵

- 1) Countries where GER for both girls and boys are above 100. In most of these countries enough school places exist for achieving universal coverage of primary education
- 2) Countries where GER is above 100 for boys but not for girls. Most of these countries show small gaps between male and female enrolment, but a few of them may need additional buildings or facilities.²⁶
- 3) Countries where GER for boys and girls are below 100. These are the countries where undoubtedly more investments in buildings and infrastructure will be needed.

This country-grouping can help in assessing the magnitude of capital expenditure required. We only consider the last two groups that require new buildings and facilities. We assume the first group will not need major new investment in school construction. Groups 2 and 3 comprise 55 countries, representing less than half the children (6-11) in developing countries. However, not all of these countries need to increase the allocation to capital expenditures as their current capital expenditure might suffice to expand GER to 100 by 2015.

Table 7 shows the latest GER figures (mid to late 1990s) for the 55 countries, as well as the share of capital expenditure in total education spending. The share of capital expenditure ranges between 1 and 40 per cent of public spending on education. The average for the 55 countries is about 10 per cent. In each country, this share is compared with the capital expenditure share required to reach universal coverage of primary education.

²⁴ Bray (1989) discusses other advantages and disadvantages of double shifting.

²⁵ There are only a few countries for which gross enrolment data are not available. They all have small populations, so their exclusion from the global estimates will not alter our conclusions.

²⁶ For the calculations below we took only the countries where the gender gap was larger than 4 points.

Table 7: *Capital expenditure for countries with GER of less than 100* (as percentage of total primary expenditure, latest available year in the 1990s)*

Region/Country	GER		Capital expenditure (%)	Region/Country	GER		Capital expenditure (%)
	Male	Fem.			Male	Fem.	
Sub-Saharan Africa				South Asia			
Angola	95	88	10	Afghanistan*	53	5	7
Benin	91	60	14	Bhutan*	82	62	2
Burkina Faso*	48	33	17	India	99	82	1
Burundi*	68	55	14	Pakistan	99	69	13
Cameroon*	88	74	9	East Asia and Pacific			
Central African Republic*	70	50	2	Cambodia	95	84	n.d.
Chad*	83	46	1	Nauru	104	98	n.d.
Comoros	99	85	n.d.	Papua New Guinea*	42	66	n.d.
Congo*	82	75	2	Solomon Islands	104	90	0
Congo, Rep. Dem.*	70	51	2	Thailand	93	90	20
Côte d'Ivoire	82	60	n.d.	Middle East and North Africa			
Eritrea	64	54	n.d.	North Africa			
Ethiopia*	52	31	32	Djibouti*	45	33	0
Gambia	78	66	40	Egypt	103	96	11
Ghana*	82	72	13	Iraq*	110	95	1
Guinea	68	40	n.d.	Morocco	94	76	8
Guinea Bissau*	85	52	n.d.	Oman	100	95	11
Kenya	89	88	6	Saudi Arabia	97	90	5
Liberia*	72	53	14	Sudan*	48	43	n.d.
Mali	60	40	2	Syrian Arab Republic*	98	93	15
Mauritania	88	79	27	Yemen*	89	45	10
Mozambique	86	65	36	Latin America and Caribbean			
Niger*	36	22	3	Caribbean			
Nigeria*	75	65	24	Belize	105	98	12
Rwanda*	88	88	6	Guatemala	100	89	5
Senegal*	73	58	2	Guyana	91	86	22
Sierra Leone*	59	41	4.5	Saint Kitts and Nevis*	101	94	3
Somalia*	18	9	26	Saint Vincent/Grenadines	99	83	25
South Africa	98	86	6	Eastern Europe and Central Asia			
Tanzania	77	76	12	Central Asia			
Togo	126	89	3	Turkey	98	86	13

Source: UNESCO Statistical Yearbook

*26 countries where capital expenditure does not seem sufficient to reach GER of 100 by 2015.

The annual enrolment growth required to achieve GER of 100 by 2015 exceeds recent trends in 26 of the 55 countries. In some of the other countries, recent capital expenditure trends seem to suffice due to an expected decline in the number of births. In other instances, it is the result of capital expenditure which has allowed for increases in classrooms exceeding child population growth. The 26 countries where capital expenditure does not seem sufficient to reach GER of 100 by 2015 represent less than 15 per cent of the 6-11 years old children in developing countries.

The next step is to estimate how much these new school buildings and facilities will cost. Relevant and reliable unit capital costs are not available. We estimate that roughly 15 per cent of total education expenditure in these countries is devoted to capital investment, considerably more than in the other countries. However, we cannot determine the breakdown by level of education. In other words, we do not know how much is spent on capital expenditure for primary schooling. We use the country-by-country recurrent unit costs as a basis. Assuming that the proportion of capital outlays allocated to primary schooling is about the same as for recurrent expenditure, we measure the required increase in capital expenditure.

As shown in Table 8 we arrive at an estimated annual additional capital expenditure of around \$650 million.²⁷ This is less than 10 per cent of the estimated required recurrent cost of reaching universal primary education.

Table 8: *Additional capital spending required for reaching universal primary education by 2015 (by region, US dollars of 1998)*

Region	Observed capital expenditure as % of total spending (latest year available)	Capital expenditure required per year to reach GER of 100 by 2015 (as % of total spending in 2000)	Capital expenditure required per year to reach GER of 100 by 2015 (\$ million)
Sub-Saharan Africa (16)	17	57	601
South Asia (2)	8	11	11
Middle-East and North Africa (4)	8	19	35
Total (22 countries)	15	48	647

Source: As in Table 4

There are stark regional differences. The bulk of the extra investment effort will be needed in sub-Saharan Africa, accounting for over 90 per cent of the additional capital investment funds. Given the size of the recurrent and capital expenditure required in several low-income countries, it looks doubtful that their financing can be covered from domestic revenues alone.

11. The Case for External Assistance

When compared with global income and the current level of expenditure on primary education, the additional costs required to reach universal primary education over the next 15 years seems relatively small. It is clear, however, that many developing countries will not be in a position to finance these costs out of domestic resources alone, even if they succeed in generating more fis-

²⁷ Four countries have not been included for lack of relevant data: Guinea Bissau, Papua New Guinea, Saint Kitts and Nevis, and Sudan. The overall estimate should not be greatly affected by these omissions.

cal revenues and in re-allocating budgetary resources from other areas to basic education.²⁸

The countries in greatest need of extra education spending are often those that face the most severe budget constraints and macro-economic imbalances, which limit the government's capacity to increase taxation and change the structure and level of public expenditure. It also results from the rigidities in budget allocations; foremost among them is debt servicing. Budget restructuring is difficult in the context of stagnant revenue and slow economic growth. Hence, external assistance will have to play a role in overcoming some of the short-term obstacles to shifting resources from other sectors to primary education, or to generating more public revenue.

Unfortunately, official development assistance (ODA) declined for most of the 1990s. ODA fell by about 13 per cent in real terms between 1990/92 and 1997/99. By the late 1990s, ODA represented less than 0.25 per cent of the combined GNP of industrialized countries, compared with the agreed target of 0.70 per cent. Total ODA amounted to \$56 billion in 1999, down from a peak of \$62 billion in 1992. Compared with the agreed target, there is a shortfall of about \$100 billion per year.

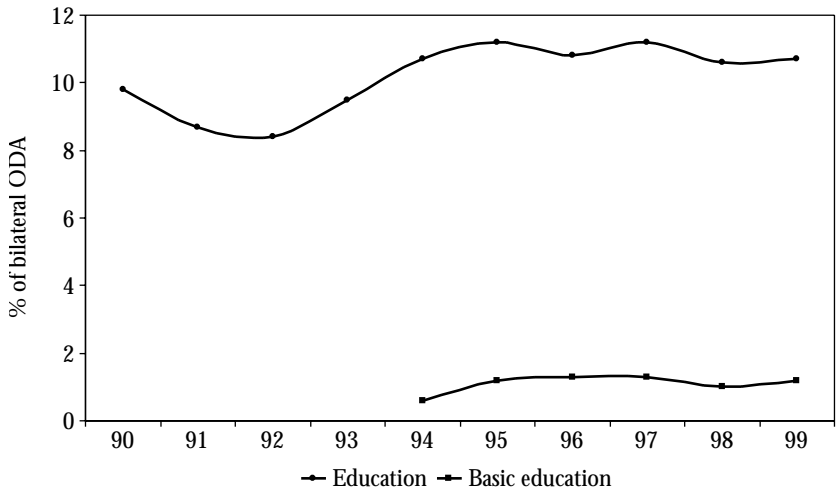
Within this foreboding context, the share of education in total ODA declined in the early 1990s before recovering to the level of 10-11 per cent.²⁹ Diagram 1 shows that the share of education in total bilateral aid has not changed significantly during the 1990s in spite of the adoption of the global education goal and the near universal ratification of the Convention on the Rights of the Child.³⁰

Moreover, the diagram shows that basic education has not been a priority for most donor countries. The share of bilateral ODA allocated to basic education has not surpassed 2 per cent since the mid-1990s, when consistent reporting began. Most of the donor support for education is directed to non-basic education. Donors seem reluctant to finance recurrent costs, the area with the most acute shortfalls for reaching universal primary education. In short, neither the level nor the composition of ODA has responded in line with the adoption of the global education goal in 1990.

28 We have not estimated private costs. Consequently, we are not considering the possibility of charging fees or other resource-generating mechanisms. The characteristics of basic education are such that it needs to be funded from public sources (Reddy and Vandemoortele, 1996). Also, the 191 countries that have ratified the UN Convention on the Rights of the Child are under the legal obligation to provide free and compulsory primary education to all. The Addis Ababa Consensus (1997), sponsored by ECA, UNICEF and the World Bank, stipulates that primary education and basic health services should be either free or heavily subsidised. User fees must be considered after a thorough review of other financing options, including general taxation, and should be limited to non-basic services.

29 In an earlier assessment Bennell and Furlong (1997), who provide a good description of the limitations of data on ODA to education, reach similar conclusions. See also Haddad (1990).

30 Article 4 of the Convention states that "With regard to economic, social and cultural rights, States Parties shall undertake such measures to the maximum extent of their available resources and, where needed, *within the framework of international co-operation*" (italics added).

Diagram 1: *Allocation of bilateral ODA to education and basic education, 1990-99*

Source: OECD/DAC Development Co-operation Report, various years

12. EFA and HIV

Before concluding, we need to state explicitly that the global and regional EFA cost estimates in this paper do not take into account the implication of the HIV/AIDS epidemic; not because the impact will be insignificant but because its quantification is virtually impossible given current knowledge and available data.

Anecdotal evidence supports the intuitive suggestion that the HIV/AIDS epidemic will be a major obstacle in many countries for achieving the objective of 'education for all' by 2015. Rakai district, for instance — one of Uganda's most heavily AIDS-affected areas — saw enrolment in three primary schools drop by nearly 40 per cent between 1989 and 1993 (Shaeffer, 1994).

HIV/AIDS affects the demand for, as well as the supply of, primary education (Kelly, 2000). Supply is reduced due to higher levels of morbidity and mortality among teachers. Absenteeism among teachers increases because of AIDS-related illness and deaths,³¹ care for HIV infected family members, funerals of community members, and/or increased moonlighting.³² Countries where the epidemic has reached a mature stage show high levels of HIV infection among teachers — often as high as 20-30 per cent. Several African countries are losing more teachers every year to AIDS than the number of annual

31 In Zambia, for instance, 1,300 teacher died in the first 10 months of 1998. This was more than twice the number of deaths reported in the previous year (UNICEF, 2000).

32 To compensate for falling real wages that may result from the overall impact of HIV/AIDS on the national budget in general and on public education spending in particular.

new recruits who enter the labour market. Supply is also likely to be affected by decreased fiscal spending or the restructuring of the national budget away from primary education, both as a result of the HIV/AIDS epidemic.

Demand for education is reduced for several reasons, including (i) changing demographics, (ii) rising opportunity costs, (iii) less affordability, (iv) concerns about sexual activity at school, (v) declining quality, (vi) stigmatisation, and (vii) weakening traditional safety nets.

First, the epidemic leads to lower fertility and higher under-five mortality, thereby reducing the number of school entrants.³³ Second, children are kept out of school because they are needed at home to care for sick family members or to supplement family income. Third, children attend school intermittently and eventually drop out because their family can no longer afford fees and related out-of-pocket costs due to reduced family income or increased health spending. Fourth, parents keep their daughters at home because of growing concern about non-consensual sexual activity at, or en route to, school.

Fifth, the HIV/AIDS epidemic erodes the quality of education as a result of absenteeism, less qualified and more inexperienced teachers, and fewer teaching materials; so that children lose interest and parents grow less willing to invest scarce resources in education. Sixth, social stigma often excludes children from families living with AIDS; not only those infected with the HIV virus, but also those directly affected by it. AIDS orphans in particular face high odds of being enrolled in primary school.³⁴ Finally, once the epidemic reaches a mature stage, it undermines the capacity of the extended family and the community for solidarity and mutual self-help.

It is clear that the impact of the HIV/AIDS epidemic on the education sector will be far-reaching.³⁵ Several countries are potentially on the verge of missing the opportunity of achieving universal primary education for the foreseeable future. In spite of this alarming picture, we refrain from estimating the cost implications of the epidemic — in part because of inadequate information and data, and in part because such estimates usually prove extremely sensitive to the underlying assumptions.

33 Whereas the impact of the epidemic on mortality is obvious, its effect on fertility is indirect. The number of births falls because women die before the end of their childbearing years. The increased use of condoms, as well as other social and physiological factors, reduce the average number of children per woman. The demographic aspect is included in our global and regional cost estimates because the impact of HIV/AIDS is incorporated in the population projection.

34 Results of Demographic and Health Surveys support the premise that children who have lost one or both parents are less likely to be enrolled than those whose parents are alive (World Bank, 1999).

35 Education also affects the evolution of the HIV/AIDS epidemic. It has been observed that the social epidemiology of HIV/AIDS is changing over time (Vandemoortele and Delamonica, 2000). In the early stage of the epidemic, it seems that the better educated are more vulnerable to HIV infection than those with lower levels of education; mainly because they are better off and more mobile. But once information and knowledge about the disease become available, the more educated are best able to change their behaviour and protect themselves against HIV; whereas the less educated become more vulnerable once the virus has spread more widely among the population.

It is safe to say that the global cost of EFA will be larger with AIDS than without AIDS, but it is impossible to determine with any degree of precision the magnitude of the extra cost involved. As its subtitle suggests, this paper provides global and regional cost estimates for EFA that have to be considered as a bare minimum.

13. Summary

The global cost estimate for reaching 'education for all' by 2015 amounts to a minimum of \$9.1 billion annually (expressed in US dollars of 1998). This estimate includes the cost of quality improvement and capital investment. Global public expenditure on primary education will have to increase by 1.4 per cent per year in order to reach the education goal by 2015.

The global shortfall in primary education spending is relatively small. It represents about one-third of one-tenth of one per cent of global income; and 0.14 per cent of the combined GNP of developing countries. The global shortfall accounts for about 11 per cent of what developing countries currently spend on primary education. Thus, 'education for all' is affordable at the global level. Compared with the expected economic benefit, it is clearly an excellent investment opportunity.

Table 9: *Summary of required annual spending to achieve 'education for all' by 2015 (by region, US dollars of 1998)*

Region	Required additional recurrent spending (\$ billion)	Additional spending for quality improvement and capital spending (\$ billion)	Total additional annual spending (\$ billion)	Annual increase required between 2000 and 2015 (%)
Sub-Saharan Africa	1.8	1.1	2.9	4.3
South Asia	1.6	0.6	2.2	2.7
East Asia and Pacific	0.3	0.1	0.4	0.2
Middle East and North Africa	1.9	0.3	2.2	2.4
Latin America and Caribbean	0.8	0.1	0.9	0.5
Eastern Europe and Central Asia	0.6	n.d.	0.6	1.6
Total	6.9	2.2	9.1	1.4

Source: Tables 4, 5, 6 and 8

Although the global estimate appears affordable, many governments will be hard pressed to meet the financial requirements for achieving 'education for all' by 2015. Sub-Saharan African countries in particular will need to sustain an expansion of their budgetary outlays on primary education by 4.3 per cent per year over the next 15 years. In South Asia, it will take a sustained growth of 2.7 per cent per year.

The magnitude of the challenge in these two regions can be quantified as follows: currently, sub-Saharan Africa and South Asia account for one fifth of

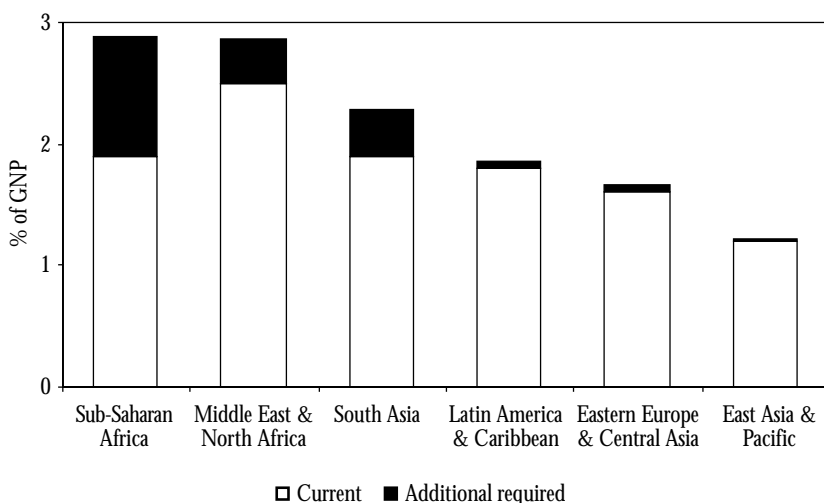
recurrent spending on primary education in developing countries; but they account for nearly 60 per cent of the global shortfall for achieving universal basic education of good quality. Without additional external assistance, it seems that 'education for all' will not be affordable in several countries.

As a proportion of total income, the extra financial efforts range between 0.02 per cent of GNP in East Asia — where most countries already have high net enrolment ratio — and 1 per cent of GNP in sub-Saharan Africa — where the goal of reaching universal primary education by 2015 will be more challenging. In all regions, the additional amount is considerably less than what is currently spend on external debt services — which ranges between 3 per cent of GNP in South Asia to 4.5 per cent in sub-Saharan Africa and 6.5 per cent in Latin America and the Caribbean.³⁶

Diagram 2 indicates that the largest shortfalls occur in the regions where current expenditure is the highest. These are the regions where children account for the largest proportion of the total population. While the school age children represent around 8 per cent of the population in East Asia, they account for 17 per cent of the total population in sub-Saharan Africa. Thus, universal basic education in East Asia and Pacific requires half as much of the national resources than in sub-Saharan Africa.

Several countries in sub-Saharan Africa and in South Asia, as well as a few in the Middle East and North Africa are unlikely to achieve 'education for all' by the year 2015 without reforms to reduce unit costs, a major increase and

Diagram 2: *Public spending for achieving 'education for all' by 2015*



Source: own calculations

³⁶ Data on GNP and debt service charges are taken from the World Bank (1998 and 2000/01).

restructuring of public spending on education, and additional donor support for primary education. Without these changes, progress on the education goal will remain elusive.

There is no doubt that public spending on primary education includes wastage. Its efficiency and effectiveness can be improved through appropriate policy reforms such as the introduction of automatic promotion, use of the mother tongue in the first years of schooling, use of teacher assistants recruited from within the community, and greater community participation in school management. However, such policy reforms will never be a substitute for adequate budget allocations. A minimum level of spending is required to provide services of good quality. Fiscal austerity frequently leads to insufficient allocations either to wages, materials, maintenance or infrastructure. Insufficient inputs in one area undermine the efficiency of total spending. For example, when teacher salaries — a basic expense — absorb 98 per cent of the budget for primary education, there is little scope for improving the quality of education.³⁷ Thus, extra resources will frequently lead to greater efficiency of public spending.

Those who argue that the existing budget has to be used more efficiently before more public money is to be invested miss the important point that insufficiencies often create inefficiencies. Most policy-makers do not face a choice between either improving efficiency or increasing budget allocations. In most cases, they have to address both aspects simultaneously. Indeed, inefficiencies and insufficiencies are not independent, but very much interdependent.

In sum, primary education has not been a priority for many developing and donor countries during the 1990s. If current trends persist, the target of universal basic education by 2015 is likely to be missed, just as it was in 2000. Nevertheless, several low-income countries have shown it is possible to achieve rapid growth in primary enrolment, as exemplified by Malawi, Uganda and Bangladesh.³⁸ Without faster progress in education, it is unlikely that the key international development targets in terms of infant mortality, child malnutrition, gender equality, and HIV/AIDS will be achieved by 2015 in the majority of countries.

37 Reducing the number of teachers or lowering their salary are seldom viable options. Classrooms are often overcrowded and teachers' salaries seldom represent a living wage.

38 In Malawi, for instance, more public finance for schools and the elimination of school fees boosted enrolment by 50 per cent in 1994. The high level of enrolment has been sustained since then (Government of Malawi, 1998).

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Appendix

Additional recurrent cost estimate of reaching 'education for all'

(by country and region, US dollars of 1998)

Region/Country	Net primary enrolment ratio 1997-99*		Net primary attendance rate (1990-98)*		Unit cost as share of GNP per capita	Unit cost used in estimates	NER used in estimates	Annual average additional recurrent cost to reach NER=100
	Male	Female	Male	Female	%	(\$)	%	(\$ million)
Sub-Saharan Africa								1,761
Angola	-	-	-	-	-	44	44	49
Benin	75	50	52	34	11	42	43	20
Botswana	98	99	-	-	9	292	99	4
Burkina Faso	40	28	38	28	21	50	33	58
Burundi	38	37	-	-	13	16	38	8
Cameroon	82	71	71	70	-	81	71	69
Cape Verde	100	97	-	-	10	133	99	1
Central African Republic	51	27	70	55	10	29	63	5
Chad	65	39	44	29	10	20	37	13
Comoros	65	55	45	42	8	28	44	1
Congo	99	93	-	-	13	87	96	11
Congo, Dem. Republic	66	51	59	53	4	4	56	18
Côte d'Ivoire	63	47	59	46	-	206	53	180
Equatorial Guinea	89	89	-	-	-	173	89	3
Eritrea	40	35	39	35	-	25	37	8
Ethiopia	43	28	-	-	37	37	36	203
Gabon	82	83	87	86	7	235	87	12
Gambia	64	55	51	43	12	41	47	4
Ghana	-	-	75	74	5	20	75	19
Guinea	49	30	39	26	11	56	33	33
Guinea-Bissau	58	32	-	-	-	22	45	2
Kenya	92	89	86	85	15	54	86	28
Lesotho	55	65	71	79	14	77	75	7
Liberia	43	31	59	53	-	83	56	25
Madagascar	67	69	58	60	6	15	59	15
Malawi	100	100	83	83	9	17	83	9
Mali	47	33	45	36	17	41	41	38
Mauritania	61	53	55	53	12	46	54	8
Mauritius	97	99	-	-	10	359	98	0
Mozambique	47	40	53	47	22	51	50	66
Namibia	84	88	74	79	17	321	77	18
Niger	30	19	31	21	29	55	26	61
Nigeria	38	33	60	58	-	53	59	332
Rwanda	67	68	61	61	16	40	61	18
Senegal	65	55	48	42	18	92	45	65
Sierra Leone	-	-	-	-	-	22	43	8
Somalia	13	7	21	13	-	20	17	25
South Africa	88	86	-	-	18	569	87	218
Swaziland	100	100	-	-	10	136	100	4
Tanzania	56	57	61	68	11	26	65	52
Togo	85	61	73	64	10	32	69	9
Uganda	92	83	65	63	4	13	64	24
Zambia	85	86	74	74	4	13	74	6
Zimbabwe	87	87	91	90	22	114	91	5

Region/Country	Net primary enrolment ratio 1997-99*		Net primary attendance rate (1990-98)*		Unit cost as share of GNP per capita	Unit cost used in estimates	NER used in estimates	Annual average additional recurrent cost to reach NER=100
	Male	Female	Male	Female	%	(\$)	%	(\$ million)
Middle East and North Africa								1,885
Algeria	94	91	95	90	-	207	93	118
Bahrain	96	98	-	-	9	688	97	0
Cyprus	96	96	-	-	12	1435	96	0
Djibouti	39	28	73	62	26	205	68	6
Egypt	94	89	83	72	13	182	78	199
Iran	99	94	99	93	7	123	96	0
Iraq	98	88	88	80	-	233	84	233
Jordan	86	86	91	91	14	210	91	54
Kuwait	89	85	-	-	-	1997	87	16
Lebanon	-	-	-	-	-	398	90	85
Libya	97	96	-	-	-	739	97	81
Morocco	77	64	61	45	12	144	53	152
Oman	86	86	91	89	13	642	90	72
Qatar	96	92	-	-	-	1260	94	4
Saudi Arabia	81	73	-	-	10	656	77	718
Sudan	43	37	59	52	-	44	56	66
Syria	96	92	98	95	8	78	97	17
Tunisia	97	94	-	-	15	315	96	2
United Arab Emirates	98	98	-	-	-	1876	98	4
Yemen	79	39	75	40	-	37	58	60
South Asia								1,611
Afghanistan	42	15	36	11	-	20	24	50
Bangladesh	80	83	75	76	6	22	76	68
Bhutan	58	47	-	-	-	51	53	7
India	78	64	75	61	11	50	68	1,004
Maldives	93	92	-	-	17	197	93	2
Nepal	79	60	80	60	8	18	70	17
Pakistan	84	60	71	62	13	61	67	449
Sri Lanka	-	-	-	-	7	57	76	14
Eastern Europe and Central Asia								604
Armenia	-	-	-	-	14	69	81	0
Azerbaijan	89	90	-	-	10	55	90	0
Georgia	95	95	-	-	19	118	95	0
Kazakhstan	100	100	87	83	16	197	85	1
Kyrgyzstan	98	97	89	90	23	69	90	0
Tajikistan	-	-	-	-	27	78	77	9
Turkey	93	82	74	71	13	377	73	535
Turkmenistan	-	-	81	80	-	95	81	5
Uzbekistan	87	89	83	83	28	202	83	54

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IS EFA AFFORDABLE? ESTIMATING THE GLOBAL MINIMUM COST OF 'EDUCATION FOR ALL'

Progress towards the target of universal access to basic education by the year 2000, set by two global conferences in 1990, has been too slow in many countries. Most of the reasons for this inadequate progress are country-specific. However, in virtually all countries one explanation stands out: inadequate public finance for primary education.

This paper updates the global and regional cost estimates for achieving 'education for all' by 2015 – the new target date set by the Social Summit in 1995. The estimates are based on the most recent country-by-country data on budgetary expenditure, population and enrolment trends, and unit cost.

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