



Chapter 4

Resource requirements for achieving EFA

For most countries, whether or not EFA is achieved will depend mainly upon the extent of national commitment to the goals. However, the fact that the international community has decided that these goals are to be achieved by a particular date implies that the extent of necessary policy change will be much greater for some countries than for others. Those where most change in pace will be needed are the countries which are at present at farthest from achieving the goals. They may often have lower incomes and weaker administrations than many of the others. They may also be societies where the political interests aligned against rapid reform may be at their most intense. This means that the politics, as well as the economics, of reform will have strong and separate influence upon outcomes.

Nevertheless, both the costs of achieving the goals and the availability of resources to secure them are likely to have a decisive influence upon whether or not EFA goals are reached. These two issues provide the theme for this chapter. Some of the goals cannot be addressed here, because the amount of evidence about the likely costs of their achievement is at present either very weak or very selective. Accordingly, the evidence on the costs of universalizing primary education, achieving gender equality in school participation, and improving school quality is assessed; implications for external financing requirements are drawn.

Some countries will find it particularly difficult to secure the amount of resource reallocation necessary to deliver the goals. This applies to countries strongly affected by the HIV/AIDS pandemic and to those recovering from, or still in the midst of, emergencies or conflict. This chapter will examine to what extent these circumstances affect the volume and nature of resources required.

Up to now, EFA efforts have focused on children's enrolment in school, rather than on completion rates or student learning outcomes.

Estimating the costs of universal primary education (UPE)

Several studies which estimate resource requirements for UPE in developing countries have been completed during the past two or three years by groups of researchers at UNESCO, UNICEF and the World Bank. Three of these have been selected for closer analysis here, each of which use country-level data but different approaches to estimation.¹ Their main purposes are to estimate the affordability of UPE and the extent to which external aid may be needed to supplement domestic resources. This chapter compares these estimates and assesses the extent to which the results of these studies can provide a guide for policy.

Coverage and methods

The costs of achieving UPE by a given date are determined by combining the pattern of enrolment growth over the intervening years with the resources allocated per student over the same period. Most studies focus upon public expenditures and consider whether present expenditures per student should be maintained, or adjusted over the longer run. The simplest approach has been to assume no change, whereby the cost estimation exercise is reduced to projecting the flow of pupil numbers over time, multiplied by their present unit cost. However, if school quality is judged to be too low, allowances to increase unit expenditures are usually made. Additionally, if school systems are very inefficient, the possibility of introducing reforms to reduce unit costs may be explored. Sometimes these adjustments are made by directly changing the assumed level of future unit costs. Alternatively, a more formal modelling framework can be used in order to simulate the cost impact of policy change. The UNESCO and UNICEF studies provide examples of the former approach, whereas the World Bank study is an example of the latter.

Country coverage

Coverage of the developing countries in the three studies was rather different (see Table 4.1). Although the UNESCO and UNICEF studies demonstrated similar coverage of the developing world, the former also included all of Eastern Europe and Central Asian countries, the majority of which are classified as 'developed'.

The World Bank study, on the other hand, concentrated on the 63 lowest-income countries with populations of over 1 million, 'home to 75% of all children out of school globally'. However, the actual simulation exercise covered only 47 countries, over two-thirds of which are in sub-Saharan Africa. Another 49 countries, judged 'at risk' of failing to attain UPE by 2015, were not included. Sixteen of these are eligible for low-cost IDA (International Development Association) loans and have populations of less than 1 million; 33 are richer countries eligible for normal World Bank loans, including Chile, the Islamic Republic of Iran, Malaysia, Mexico, Thailand and others.

Table 4.1. EFA cost studies: number of developing and transitional countries covered, by region

Region	UNESCO	UNICEF	World Bank
East Asia/Pacific	20	20	2
Eastern Europe/Central Asia	27	9	4
Latin America/Caribbean	29	27	3
Middle East/North Africa	16	18	1
South Asia	9	8	4
Sub-Saharan Africa	50	46	33
Total	151	128	47

Source: Brossard and Gacougnolle (2000); Delamonica et al. (2001); World Bank (2002a).

Assumptions and methods

Criteria for achievement of UPE. The main assumptions and methods used by the studies are summarized in Table 4.2, and some important points of difference are worth noting. First, the UNESCO and UNICEF studies each adopted the achievement of net enrolment ratios (NERs) of 100% by 2015 as the criterion for the successful implementation of UPE. The World Bank study adopted completion rates of 100% as

1. The studies are: Brossard and Gacougnolle, 2000, referred to as 'UNESCO'; Delamonica et al., 2001, referred to as 'UNICEF'; and World Bank, 2002a. At least three other studies have provided estimations, but without providing country-level data in their reports. A comparison of the different methods used in all of these studies is provided in Bennell (2002).

the criterion for success. The completion rate is defined as the total number of pupils who successfully complete the final grade of primary school, expressed as a percentage of the total population of children of school-leaving age.² The authors of the study have pointed out that 'to date, EFA efforts have focused heavily on getting children enrolled in school, rather than on completion rates or student learning outcomes'. Data on the number of children completing primary education are often not known. The World Bank study estimates the number of pupils completing the final grade of primary school by deducting the number of repeaters in this grade. Since this does not take into account final-year dropouts, the authors accept that their estimates are an overstatement of the true primary completion rate. Completion rates are important indicators of successful implementation of EFA. For that reason, they are alluded to in the wording of the UPE goal. However, for reasons discussed in Chapter 2 (Box 2.2) of this Report, they cannot be used as the sole criterion for its successful implementation.

Length of the primary-school cycle. The enrolment projections presented by each study are, without exception, based on the current duration of the primary-school cycle in each country. However, the World Bank study uses a standard six-year period to calculate resource requirements. This is done 'in order to avoid biasing estimates of the external financing requirements towards countries with longer primary cycles and away from countries with short ones' (World Bank, 2002, p. 18). Their cost estimates are therefore biased downwards because primary education cycles exceed six years in over one quarter of developing countries.

Data quality. As regards data quality, the World Bank study made the most concerted effort to collect accurate and up-to-date enrolment, expenditure and funding data. In particular, it utilized the global network of World Bank personnel to provide data for countries that are poorly covered by the UNESCO annual statistical surveys. The other studies relied on UNESCO data, which are compiled from questionnaires completed by Ministries of Education in each Member State.

Information about recurrent and capital expenditure on primary education by governments, donors, households, non-government organizations and other stakeholders is poor in most developing countries. What schools actually receive from government is invariably markedly less than what is indicated in official estimates of expenditure and other types of income and expenditure documentation. Unit-cost estimates are usually based upon the government's direct funding of the primary education subsector, and do not therefore include the often sizeable expenditures on administration and other key support services (including pre- and in-service teacher training, inspection and curriculum development).

Accordingly, the use of official statistics may often lead to the underestimation of public expenditures per pupil. The data, too, are patchy. For example, in the case of the UNICEF study, information on either unit costs or NERs was missing for more than one quarter of the 128 countries included. In response, the cost estimates in the study were based upon those in countries with similar income or regional characteristics, while NER estimates were based upon known gross enrolment ratios (GERs) and other data. High margins of error in the estimates for individual countries are a likely consequence of these circumstances.

Projection methods. There are important differences in the projection methods used in these studies. The UNESCO and UNICEF studies both provide simple projections of the costs of UPE based upon multiplying present public expenditures per pupil by the projected school-age population in 2015 for each country. However, all three of the studies also provide projections incorporating the impact of policy reforms that are expected to improve the quality and efficiency of school systems. To assume that present public expenditures per student will remain unchanged in the future is unnecessarily restrictive, and the assumptions made about policy reforms can considerably affect the usefulness of cost studies, because the existing pattern of expenditures is usually not optimal. In a large number of countries that achieve UPE, there are still patent needs to improve the quality

In most developing countries, information about expenditure on primary education is weak.

2. Strictly speaking, this is a measure of the 'gross completion rate'. Since it has not been adjusted for age, in systems with high levels of repetition the statistic may exceed 100%. If, from a policy perspective, we are mainly interested in the number of children who complete the primary cycle, rather than the age at which they do so, the gross rate will be preferred to the net, age-adjusted, rate.

The idea that teachers' salaries need to fall in all countries does not make sense: in some, they must rise significantly beyond present levels in order to encourage teacher morale and increase productivity.

Table 4.2. Key parameters and assumptions used in the three UPE cost studies

Parameters and assumptions	UNESCO cost study	UNICEF cost study	WORLD BANK cost study
General			
Criterion for UPE	100% NER	100% NER	100% completion rate
Number of countries studied	151	128	47
Target date	2015	2015	2015
Length of primary span	Actual	Actual	6 years
Current unit costs (US\$, 2000)	188.2	42.4	32.0
Unit costs with policy measures (US\$, 2000)	198.0	140.8	79.0
Projections			
Using present unit costs	yes	yes	no
Using adjusted unit costs (with reforms)	yes	yes	yes
Assumptions for private enrolments	-	-	10%
Assumptions for economic growth	-	-	not specified ¹
HIV/AIDS included	partly	partly	yes
Capital expenditures included	yes	yes	yes
Target parameters			
Quality reforms			
Pupil-teacher ratio	10% improvement	40	40
Percentage of non-salary costs in recurrent expenditures	-	15%	33%
Efficiency reforms			
Teacher salaries	70% of 1997 levels	-	3.5 times GDP per capita
Repetition	-	-	10%
Financing reforms			
Public revenues as percentage of GDP	-	-	14-18%
Education expenditures as percentage of revenues	-	-	20%
Primary expenditures as percentage of total education expenditures	-	-	50%

1. The assumptions were made, but not specified, in the text.

Source: Brossard and Gacougnolle (2000); Delamonica et al. (2001); World Bank (2002a).

of schooling, which will usually require increased resources per student. On the other hand, where inefficiencies are widespread, qualitative reforms may facilitate reductions that are badly needed for pedagogic reasons in repetition and drop-out rates, and which may allow costs per pupil, or per completer, to fall. Accordingly, the diagnosis of the particular resource problems faced by national systems, and of the reforms which could be introduced to tackle them, are important both for the adequacy of the cost estimates and to the encouragement of a process of national reform.

Table 4.2 summarizes the policy measures simulated in each of the studies. The UNESCO study assumed that, in each country, the number of pupils per teacher would fall by 10% by 2015 – raising unit costs – but that teachers' salaries would fall in real terms to 70% of their 1997 levels, thus reducing them. The UNICEF study also assumed a reduction in the pupil-teacher ratio – in this case to 40 in countries where higher ratios were found. In addition, the authors allowed for at least 15% of recurrent expenditure being allocated to materials and other non-wage

inputs to schooling. Although most of these assumptions make sense, the idea that teachers' salaries need to fall in all countries does not: in some, pay will have to rise significantly beyond present levels in order to encourage teacher morale and increase productivity.

The World Bank study adopted a more empirical approach. Its policy simulations are based upon the specific premise that 'education systems in low-income countries that have either achieved 100% primary completion or are relatively close have some basic common features' (p. 2). The study investigates the financing characteristics of 51 countries that have provided the necessary data, distinguishing ten 'high performing countries' (defined as having GERs of over 90% and primary completion rates of over 70%) from the rest.³ The authors found that these high performance countries:

- devote a higher share of national resources to public primary education (1.7% of GDP compared with the sample average of 1.4% of GDP);

3. The group comprised Bangladesh, Bolivia, the Gambia, India, Indonesia, Lesotho, Uganda, Viet Nam, Zambia and Zimbabwe, although the Gambia and Zambia had GERs of less than 90%.

- exhibit approximately average unit costs (spending the equivalent of 12% of per capita GDP per public primary student, compared with 13% in the full sample);
- have teacher pay levels which are similar to other groups (spending 3.6 times per capita GDP per teacher);
- spend slightly more of their recurrent budget on non-salary items than other country groups;
- have pupil-teacher ratios of about 40:1; and
- have much lower repetition rates than any of the other groups (8.2% compared with a sample average of 17%).

Using these results from the high performance countries as a guide, the World Bank adopted the set of target parameters shown in Table 4.2 as 'performance norms' for its national simulations.

The other main cost parameters that have been treated differently in the three studies include capital expenditures, private schooling, and the adjustments, if any, made for the prevalence of HIV/AIDS. As regards capital expenditures, the UNESCO study has assumed that the ratio of capital to current spending will remain the same as in the base year. The UNICEF study argues that in most of the 73 developing countries with GERs over 100%, 'enough school places exist for achieving universal coverage of primary education' (p. 13). The authors assumed therefore that additional capital expenditure requirements for these countries are zero. This assumption requires that the move to net ratios of 100% can be entirely accommodated by declines in GER, which ignores the fact that many pupils who are currently out of school live in areas where there are no school facilities at all. The UNICEF study also overlooks the impact of population growth: in many countries, the increment to the school-age population over a fifteen-year period will exceed 50%, which is substantially greater than the present gap between gross and net ratios. In such cases, even if GERs and NERs were equalized at 100% (and ignoring the problem of school location), the present number of school places would still prove to be inadequate by 2015. For the remaining 55 countries, it has been assumed

that 15% of total education expenditure is being spent on capital investment. Furthermore, in the absence of adequate data, it also assumed that 'the proportion of [total education] outlays allocated to primary schooling is about the same as for recurrent expenditure' (p. 14).

The World Bank study states that country-specific data were used, when these were available. Where they are not, the authors assume that average cost of a 'fully equipped classroom' is US\$8,000 in sub-Saharan Africa, and \$3,500–\$4,000 in South Asia. The countries where no capital expenditure data were available have not been specified. None of these studies consider the possible impact of teachers working double shifts or of multi-grade teaching on capital spending. Yet these policy options can have a major impact not only upon the number of teachers needed (and thus upon the pupil-teacher ratio), but also upon the number of classrooms required during the move towards UPE.⁴

Since these studies aim to provide estimates of the public cost of attaining UPE, the extent to which people choose to educate their children in private schools needs to be considered, because its incidence may reduce the amount of public spending required. The World Bank study – the only one to do so – assumes that 10% of a given age group will be enrolled in private schools, based on the observed average in the sample of countries for which data were available. Since this is the sample mean, for many countries it will prove to be a strong underestimate of private provision. Furthermore, it could be argued that the trend towards private schooling may well accelerate as development proceeds.

Finally, the World Bank study was the only one of the three to adjust its estimates to allow for the particular costs of the HIV/AIDS pandemic in the countries covered. The three main areas of potential impact are: lower enrolment growth rates, increased teacher morbidity and mortality, and increased numbers of orphans and of other children directly affected by the epidemic. United Nations population projections – utilized by all three studies – have been adjusted to take into account the demographic effects of the epidemic. Accordingly, even though great uncertainties remain about the impact of the

When estimating the public cost of UPE, adjustments must be made to allow for the particular costs of the HIV/AIDS pandemic.

4. An earlier set of simulations demonstrated that the introduction of double-shifting sufficient to reduce the teacher-pupil ratio by 15% was associated with a decline of classroom requirements by up to 20%, at UPE enrolment levels. See Colclough and Lewin (1993), pp. 191–7.

Public spending in all countries taken together will need to increase significantly each year until 2015.

epidemic on fertility levels, each of the studies allows for the impact of the disease on the primary-school-aged population.

In addition, the World Bank study attempts to assess the impact of the epidemic on teachers and orphans. The authors assume that mortality rates for teachers will be similar to that of other adults, and that since teachers will be replaced at the new lower salary levels envisaged by the authors, increased mortality will actually tend to reduce teacher costs in future years. Consequently, the World Bank study concludes that the main cost burden of the HIV/AIDS epidemic with respect to the UPE target will be the additional financial support required for orphans. The authors estimate that US\$50 per year (in constant 2000 price terms) will be needed to maintain each maternal and two-parent orphan in school. The combined impact of these two assumptions on the total costs of achieving UPE is significant. However, as shown later in this chapter, the assumptions appear to both understate and omit important dimensions of the likely costs involved.

Results

As indicated earlier, the annual costs of UPE to a government are a product of the required enrolments by the target date and public expenditures per student at that time. Total costs are determined by how these two factors change over the intervening years. It should by now be clear that the process of estimating these apparently simple magnitudes is in fact rather complex. A significant body of assumptions is needed, each of which is capable of influencing projected outcomes. Obviously, estimates which use different assumptions cannot be expected to generate exactly the same results. However, it is reasonable to expect that they would not entirely conflict. Indeed, the process of compiling separate estimates which differ in detail, but which suggest the same type of conclusion, is an important means of providing evidence and support for desirable policy change.

Additional public expenditures required

The results from the three studies can be compared mainly by examining their conclusions concerning the extent to which public spending on primary schooling will need to increase in order to achieve UPE. Table 4.3 shows, for 46 of the countries included in the World Bank study,⁵ estimates of the average additional public expenditure required annually over the period to 2015 implied in each study. These estimates have been made using different unit cost figures and the base-year figures differ substantially, with the average across all countries being much higher in the UNESCO study than the others (Table 4.2). Further variation occurs because of the different mix of quality and efficiency reforms used for of each study to estimate future unit costs, so some significant degree of variance in projected outcomes is to be expected. It is not possible, from the data provided in the documents, to compare projected expenditures with and without reforms at national level and thus to enable the separate impact of the assumptions made in each study to be identified.

The estimates suggest that public spending, in all the countries taken together, would need to increase, on average, by between \$4.3 billion and \$8.4 billion per year over the period. The UNICEF and UNESCO studies both produce closely similar results for these aggregate figures, while the World Bank estimate is some 70%–95% higher than the other two.

However, it can be seen from the table that many of the estimates for individual countries differ by a much larger margin. The difference between the maximum and minimum estimates is often very wide, with more than a three-fold difference occurring in 24 (52%) of the country cases. Although the UNESCO study uses higher average unit cost estimates than the others, the World Bank study estimates the highest additional costs in 32 of the countries, while the other 2 generate the highest estimates in 7 countries each. If the highest and lowest estimates are summed for each country, it can be seen from the last three columns of the table that the range of average annual additional costs increases from a minimum of \$3.2 billion to a maximum of \$9.4 billion over the years to 2015.

5. Since 1 of the 47 countries in the World Bank's analysis – the Republic of Moldova – was not included in the UNICEF study, it is has not been included in Table 4.3.

Table 4.3.
Average annual additional cost for achieving UPE by 2015, as estimated in three different studies, in millions of US\$ (2000)

Country	UNICEF study	UNESCO study	World Bank study			
	Annual average additional cost to reach NER=100	Average annual extra spending Scenario 1	Average annual extra spending	max	min	max/min
India	1474.01	1164.72	3832.70	3832.70	1164.72	3.3
Pakistan	790.38	394.91	660.69	790.38	394.91	2.0
Nigeria	519.34	645.24	766.79	766.79	519.34	1.5
Yemen	106.86	584.86	56.70	584.86	56.70	10.3
Bangladesh	130.84	15.77	286.55	286.55	15.77	18.2
Ethiopia	253.76	93.13	201.32	253.76	93.13	2.7
Angola	68.43	250.65	207.47	250.65	68.43	3.7
Côte d'Ivoire	248.29	225.52	167.88	248.29	167.88	1.5
Sudan	94.87	30.79	194.67	194.67	30.79	6.3
Kenya	73.14	74.74	172.00	172.00	73.14	2.4
United Republic of Tanzania	86.11	59.83	171.40	171.40	59.83	2.9
Uganda	44.97	28.39	140.85	140.85	28.39	5.0
Cameroon	122.33	10.01	132.38	132.38	10.01	13.2
Democratic Republic of the Congo	29.52	76.04	125.96	125.96	29.52	4.3
Congo	117.24	7.07	50.00	117.24	7.07	16.6
Honduras	36.66	15.01	89.00	89.00	15.01	5.9
Senegal	87.13	51.24	81.82	87.13	51.24	1.7
Nepal	30.45	15.01	86.00	86.00	15.01	5.7
Mozambique	85.89	31.77	85.97	85.97	31.77	2.7
Niger	75.27	75.50	46.89	75.50	46.89	1.6
Burkina Faso	74.13	66.58	66.54	74.13	66.54	1.1
Ghana	36.94	68.65	19.68	68.65	19.68	3.5
Haiti	15.47	5.66	59.71	59.71	5.66	10.6
Guinea	40.01	21.76	58.07	58.07	21.76	2.7
Zambia	11.96	19.58	57.03	57.03	11.96	4.8
Rwanda	27.70	55.92	41.81	55.92	27.70	2.0
Mali	51.22	29.48	54.00	54.00	29.48	1.8
Cambodia	6.65	0.44	52.00	52.00	0.44	119.5
Eritrea	10.45	43.30	10.50	43.30	10.45	4.1
Georgia	0.00	0.00	42.00	42.00	0.00	42.0
Armenia	0.00	0.00	39.00	39.00	0.00	39.0
Madagascar	24.15	11.97	38.46	38.46	11.97	3.2
Malawi	22.92	10.01	34.06	34.06	10.01	3.4
Chad	17.01	11.75	33.52	33.52	11.75	2.9
Benin	26.80	11.53	32.00	32.00	11.53	2.8
Lao PDR	7.00	4.35	31.00	31.00	4.35	7.1
Burundi	10.49	25.24	20.10	25.24	10.49	2.4
Togo	16.51	6.96	21.57	21.57	6.96	3.1
Nicaragua	17.18	12.51	18.00	18.00	12.51	1.4
Central African Republic	7.52	3.92	17.45	17.45	3.92	4.5
Lesotho	8.38	15.01	16.65	16.65	8.38	2.0
Sierra Leone	11.17	2.50	14.28	14.28	2.50	5.7
Mauritania	12.28	9.57	10.80	12.28	9.57	1.3
Gambia	5.30	4.24	5.54	5.54	4.24	1.3
Guinea Bissau	2.69	2.94	5.14	5.14	2.69	1.9
Mongolia	0.00	0.76	1.00	1.00	0.00	1.0
Total	4939.43	4294.85	8356.95	9402.07	3184.11	3.0

Cost estimates in the UNICEF and UNESCO studies have been inflated to US\$ prices for the year 2000. UNICEF figures have been adjusted by the population and NER growth rates from 2000–2015 to make them comparable. Estimates shown for World Bank have been calculated by subtracting recurrent expenditures in 2000 from the average annual recurrent expenditures required for UPE.

Source: Delamonica et al. (2001), Appendix I, pp. 23–25; Brossard and Gacougnon (2000), Table A.1, Annex 2, pp. 49–52; World Bank (2002a), Table A.6a, Technical Annex, p. 8.

The World Bank estimates that India will have a sizeable surplus of domestic funding for primary education, averaging nearly US\$1.4 billion between 2000 and 2015.

External funding requirements

The World Bank study is the only one of the three to provide estimates for the extent of external funding required. This figure is derived by comparing the expected public resources available for primary education spending (derived according to the assumptions shown in Table 4.2) with the pattern of expenditures required to achieve UPE. The resulting annual gaps are summed and then averaged over the 15-year period. As indicated in Table 4.4, the authors expect an annual external funding requirement for the 47 countries of \$2.5 billion under their second ('middle') scenario for domestic resource mobilization (government revenues being 14%–18% of GDP; 20% of government revenues being spent on education; and 50% of education expenditure being allocated to primary schooling).

They project that the external funding requirement for primary education will peak at US\$4.5 billion per annum in 2015. Sub-Saharan Africa will require 85% of this external assistance. Five countries have annual external funding gaps of more than US\$100 million per annum (Democratic Republic of the Congo, Ethiopia, Nigeria, Pakistan and the Sudan), which between them account for nearly 42% of the total external funding requirement. Another seven countries are projected to require, on average, US\$50–100 million per annum in donor support (Cameroon, Côte d'Ivoire, Mali, Niger, Senegal, United Republic of Tanzania and Uganda). Aid requirements appear to be surprisingly small for countries such as Bangladesh, Malawi,

Mozambique and Zambia, especially in view of current levels of donor support to their education sectors. India is projected to have a sizeable surplus of domestic funding for primary education, averaging nearly US\$1.4 billion between 2000 and 2015.

How likely are these three scenarios? As will be clear from earlier commentary, the answer depends mainly upon the reasonableness of both the policy parameters set out in Table 4.2. and the revenue and expenditure assumptions discussed above.

Much could be said about the pros and cons of the values adopted for the target parameters in the World Bank study. However, they are broadly similar to those suggested by some earlier work,⁶ and in other ways they are consistent both with known research results and with common sense. For example, many poor countries with high cost systems are unlikely to be able to universalize provision unless something is done to reduce unit costs. In several francophone African countries, high teacher costs are compensated by very high pupil-teacher ratios, and total costs are met by reducing enrolments relative to other countries at similar levels of income. Thus the salary bill is affordable, but it brings negative consequences for both the quantity and quality of provision.⁷ As in other areas of public policy, there are clear choices to be made that are capable of affecting the possibility of services being universalized.

Nevertheless, while it may be unproblematic to advocate moving the parameters in the directions indicated by the more successful country cases, it should be recognized that the actual mechanics of doing this will often be very difficult indeed. As the World Bank study acknowledges, teachers' salaries provide a good example. Where these are very high relative to GDP per capita – as in Eritrea, Ethiopia, Haiti, Lesotho, Niger, Central African Republic, Rwanda, Mozambique, Zimbabwe and others⁸ – it often reflects structural characteristics of the economy (such as a general shortage of skilled people, or a highly agrarian economy with a small formal sector), the effects of which cannot easily be disregarded. In such economies, the salary ratios – not just of teachers, but of all

6. Colclough and Al-Samarrai (2000), for example, found very similar relationships between public spending and unit costs in low- and high-enrolment countries to those reported in the Bank study.

7. See Mingat (1988 and 2002); and Colclough et.al. (forthcoming).

8. In each of these countries, average teachers' salaries were more than six times as much as GNP per capita in the late 1990s, compared with an average for sub-Saharan Africa of 4.3, and for a broader sample of 56 countries of 4.4. See Colclough and Al-Samarrai (2000), Tables 3 and 5; and World Bank (2002a), Tables 4.1 and A11.

Table 4.4.
World Bank estimates for average annual domestic resource mobilization and external funding requirements for 47 selected countries, in billions of US\$

Region	Support for HIV/AIDS orphans	Domestic resource mobilization			External funding		
		Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
47 countries	No support	4.1	4.0	4.4	1.5	1.6	1.1
	Support provided				0.6	0.6	0.6
	Sub-total				2.1	2.2	1.7
Rest of world	None required	2.3	2.3	2.1	0.3	0.3	0.3
Total		6.4	6.3	6.5	2.4	2.5	2.0

Source: World Bank (2002a), Table 4.13.

professional workers – tend to be higher relative to per capita income than they are in more industrialized countries, because the level of teachers' salaries is a product of the remuneration demanded by skilled and professional workers as a group, and cannot necessarily be affected in isolation. More generally, teacher salary level is also a function of the structure of the economy, which cannot easily be altered as a matter of short- or medium-term policy choice. One response, suggested by the World Bank study (pp. 41–42) is to recruit a new cadre of teachers at lower salary levels, while continuing to pay existing staff on the old scales. A number of countries, including Senegal and Mali, have adopted this approach with some success. However, the impact on average salary levels is slow, and it remains to be seen whether such a 'double' salary level for teachers can become the dominant mode of employment for the profession as a whole.

A second example is provided by average rates of repetition, where the target rate, in the World Bank study, is set at 10% for countries currently above this level, with no change envisaged for other countries. There is no doubt that high rates of repetition are dysfunctional. They are symptomatic of a discontinuity between the demands of the curriculum on the one hand, and the ability of schools and teachers to impart it, on the other. Improvements in the quality of schooling and curriculum reform provide two ways in which high rates of repetition can be tackled. In some countries, however, policies of automatic promotion have been introduced – often in the absence of reforms to improve children's learning. In these circumstances, observed repetition rates can be a poor efficiency measure. Where progression to the next grade is virtually automatic, as in many of the 'high performing' countries identified in the World Bank study, the learning outcomes of children may actually be lower than in those having end-of-year examinations which determine the possibility of progression within schools. Although repetition rates may be lower in the former group, they may be an inadequate proxy for learning outcomes. This is not to argue that repetition rates should not be reduced, but rather that the ways in which some of the 'high

performing' countries have achieved these reductions may not necessarily provide the best model for policy.

The assumptions for revenue and public spending appear to be defensible in principle, but very ambitious in practice, and one way of assessing just how ambitious is to consider their implications for the extent of real expenditure growth on primary schooling over the projection period. The World Bank's simulations suggest that total expenditure on primary education in the 47 countries would need to have risen from \$7.4 billion in 2000 to \$23.3 billion in 2015 (World Bank, 2002a, p. 62) – an expenditure growth of 8% per year in real terms over the 15 years. By the final year the gap between domestic financing and total expenditures is expected to amount to \$4.5 billion. This implies that domestic resources available for expenditure on primary schooling would, in 2015, amount to \$18.8 billion in these countries.

In order to assess the implications for the required growth in domestic financial resources, we need to know the extent of external financing of primary schooling in these countries in 2000. This is not precisely known, but an amount of \$1 billion would be consistent with the aid estimates given in the next chapter, and roughly consistent with an average funding gap of \$2.5 billion over the 15 years, as reported in the Bank study.⁹ In this case, the required growth of domestic resources, from \$6.4 billion (i.e. \$7.4 billion domestic expenditure, minus aid resources) to \$18.8 billion, would amount to a growth rate of 7.5% per year over the 15 years. If domestic resource availability were less than this in the base year, its subsequent required rate of growth to 2015 would be greater than these estimates suggest.

These increased domestic resources have to be generated by economic growth, on the one hand, and/or by fiscal reform on the other. However, the recent growth record of the economies in these countries is not promising (33 of the 47 countries are in sub-Saharan Africa, where, during the 1990s, weighted real GDP growth was scarcely more than 3% per year). If this growth record were not improved, shifts in sectoral expenditure, together with more fundamental

In some countries, policies of automatic promotion are often introduced in the absence of reforms to improve children's learning.

9. Although this assumption may seem high – constituting 13.5% of public spending on primary education in these countries – aid to education in the late 1990s in nine of these countries amounted to 36% of their combined public spending on education (Colclough et al. (forthcoming), Table 7.7).

Any attempt to assess the costs of achieving UPE must be done on a country-by-country basis.

fiscal reform, would need to provide the remaining 4.5% annual real growth in resources. These expenditure shifts would represent major increases in resource requirements, and it is by no means clear that such strong and sustained changes will take place.

If resources were not secured, the gap between domestic resources and required expenditures could increase sharply. For example, if the 47 countries were able to increase real domestic resources for primary schooling by 5% per year over the 15-year period (which would be a substantial achievement), the resource gap in 2015 would amount to \$9.9 billion rather than the \$4.5 billion projected in the World Bank study. Furthermore, under these circumstances, the average gap to be filled by aid would rise from \$2.5 billion to \$4.2 billion per year over the fifteen years.¹⁰

UPE: Conclusion

All attempts to assess the costs of achieving UPE must be carried out on a country-by-country basis. Estimating likely resource requirement estimates at the regional or world levels underestimates global needs for three main reasons. Firstly, all estimates are extremely sensitive to the values of unit costs and these can be properly addressed only at the country level. Secondly, for cost purposes, enrolment projections conducted at world or regional levels are misleading since those countries having reductions in pupil numbers because of declining school-age populations are implicitly added to the enrolment increases required elsewhere.¹¹ A third, and related, point is that the financing gaps in countries unlikely to be able to finance UPE themselves should not be added to surpluses elsewhere. Thus, aggregated methods of counting either enrolments or costs will not produce helpful results. For this reason, we have included in this chapter only those recent estimates that have been based upon country-level analysis.

It has been shown, however, that these estimates differ substantially from each other. The differences illustrate the sensitivity of the cost estimates to the data used in the analysis,

to the assumptions used about the extent of required or desirable policy change, and to the assumptions made about future rates of economic growth. As regards costs, there is an urgent need to improve the quality of information on public expenditures on education. There appears to have been a deterioration in the quality of these data in recent years, and without some sharp increase in coverage and quality all attempts to estimate resource requirements will be undermined. Partly as a result of this quality decrease, there are substantial differences in the unit cost information adopted in different studies, and this is one of the more important causes of their varying results.

Among the three studies analysed above, the results provided by the World Bank are the most comprehensive and dependable. Methodologically, they are superior to those in most other recent work, and the simulation framework employed allows most of the key policy variables to be integrated with the analysis. However, the Bank study almost certainly underestimates both the expenditure implications of the move to UPE and the external aid requirements quite considerably. Firstly, it covers only the countries furthest away from UPE, with populations over 1 million. Up to one quarter of children at present out of school live in countries not covered by the Bank's analysis. Secondly, its adoption of a six-year primary cycle for all countries ignores the additional costs of UPE in 25% of countries with longer systems. Both of these factors imply that the costs of reaching UPE are underestimated. The estimates made for the size of financial gaps are also reduced by the same factors. Although many of the countries omitted from the analysis should not encounter great difficulty in financing their move to UPE, some of them will undoubtedly need sustained external support.

In addition, however, it is likely that the assumptions concerning the speed of policy change and the extent of required fiscal reform envisaged in the World Bank study are too demanding. On reasonable, but still ambitious, assumptions for revenue growth and fiscal reform, it seems likely that the size of external aid requirements in the 47 countries will be up to

10. This calculation maintains the assumption that aid transfers for primary schooling in the 47 countries were roughly \$1 billion in 2000. This calculation is somewhat sensitive to the division of aid resources between India and the other countries in 2000, and the division of final-year expenditures between them. However, since all countries under this lower growth scenario for domestic resources would face financing gaps, the estimate is not subject to the 'adding up' problem mentioned further in the text.

11. Projections for the 1990s showed that the simple difference between total developing country enrolments in 1990 and those that would have been required for UPE in 2000 understated gross additional enrolments – i.e. the sum of all the national increases only – by more than 25% (Colclough and Lewin (1993), p. 212).

two-thirds higher than those projected in the study. If the speed of implementing the proposed quality and efficiency reforms were to be delayed, the discrepancy would be even greater. Finally, there are some categories of policy change and resource provision that have not been covered adequately by any of these studies. These categories are of considerable importance to EFA and to a number of the goals, including those covering formal schooling. They include the treatment of gender, the impact of HIV/AIDS and the situation of countries in circumstances of emergency. These are the topics that will be discussed in the remainder of this chapter.

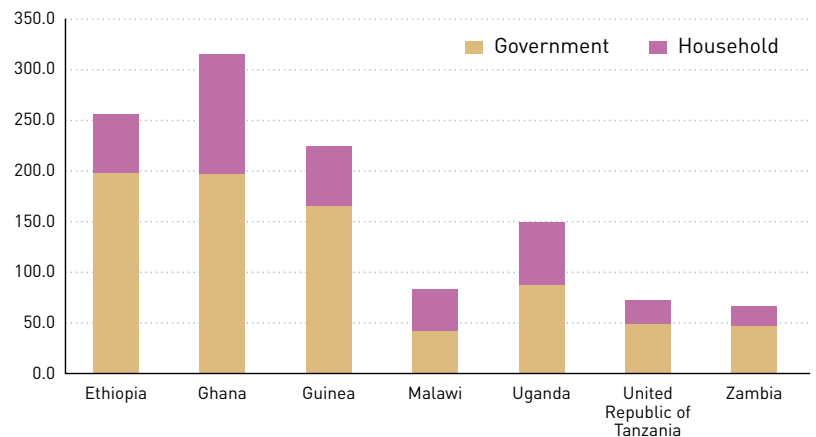
Gender targets and the demand for schooling

Each of the studies assessing the costs of UPE accepts that strong supply-side, expansionary policies to support increased enrolments will be needed over the coming decade, but they do not attempt to analyse the costs of increasing the demand for schooling. Their emphasis is upon measures to improve and increase the number of schools, classes, teachers and materials. They also accept, albeit with more cursory treatment, the importance of measures to improve the quality of schooling, since low quality undermines both the value of schooling and the willingness of parents to enrol their children.

Is there demand for girls' – and boys' – schooling?

It has become clear, however, in recent years, that supply-side policies – though critically important – will be insufficient to achieve schooling for all. Research has shown that a central explanation for the continued under-enrolment of children from poorer households lies in the direct and indirect costs incurred when these families send their children to school. Such costs include, but are by no means limited to, the fees charged by some schools and countries as a condition for school attendance. Governments increasingly find that fees are not helpful to enrolment growth at primary level,

Figure 4.1.
Proportion of unit costs represented by public and private expenditures in seven African countries



Sources:

Ethiopia: Weir and Knight (1996), education sub-sample of the Ethiopia Rural Household Survey (data include fees, stationery and clothing).

Ghana: Penrose (1998), 1995 survey (data include tuition, PTA fund, uniform, stationery, textbooks and food).

Guinea: Tembon et al. (1997).

Malawi: Rose (2001), 1998 household survey (data include school contributions, stationery, clothes and pocket money).

United Republic of Tanzania: Mason and Khandker (1996), from HRDS (data include fees and contributions, uniforms, textbooks and stationery, and other expenditure).

Uganda: Opolot (1994), 1992 survey (NB: pre-UPE) (data include uniforms, PTA fund, building fund, textbooks and stationery, extra tuition and other expenditure).

Zambia: World Bank (1996), from 1996 survey data (data includes uniform, stationery, PTA fund and general purpose fund).

and that they directly undermine the goal of achieving UPE. Even in 'fee-free' systems, however, there are many other direct costs of attendance. These include the costs of uniforms (or better clothes for children than would otherwise be needed), books, sports fees, 'voluntary' school contributions, transport and the like. These costs are often high, both absolutely and relative to public expenditures on schooling. For example, in six African least developed countries (LDCs) for which there are data (Ethiopia, Guinea, Malawi, Uganda, United Republic of Tanzania and Zambia), private household expenditures per pupil during the 1990s were, on average, slightly less than half the level of public recurrent expenditures per pupil (see Figure 4.1). In addition – and often of even greater significance for poor households – are the indirect costs of income foregone arising from the reduced availability of child labour when children go to school. These opportunity costs are strongly felt even if the children themselves do not directly generate cash income, because they often substitute for adult household labour – thereby releasing older household members for remunerative work.

The continued under-enrolment of children from poorer households can be explained by the direct and indirect costs incurred when these families send their children to school.

In many African non-pastoral households, the loss of girls' labour is more keenly felt than that of boys'.

It is likely that income-transfer schemes will be needed to provide a 'short-cut' to achieving UPE.

Gender in children's economic contribution vs. schooling

The distribution of these direct and opportunity costs is unequal by gender and by household poverty. For example, the loss of girls' labour is, in many African non-pastoral households, more keenly felt than that of boys'. Equally, the direct costs of school attendance are often greater for girls – owing to higher costs for their clothing, and for greater security for them while travelling to school. Expected future benefits to households also differ by gender. Many parents expect that the education of their sons will eventually bring them greater benefits than what they could expect from educating their daughters. All such cost and income differences are perceived more acutely, the lower the income of the households concerned. For these reasons, measures are required to reduce the private costs of educating children if UPE is to be achieved. Such cost-reduction measures are most strongly required in the case of children – and particularly girls – from the poorest households.

Some types of cost-reduction can best be achieved by 'macro' changes in policy. School fees can be abolished. Charges for books, sports and other items can also be removed. It can be argued that these types of cost-reduction policy are more efficient than compensation schemes, provided that differential cost-incidence for richer and poorer households is not an explicit aim of policy. In any case, charging differential fees to rich and poor households is not usually possible, owing to the practical difficulties of means-testing at the school level (although South Africa is an exception).

The magnitude of other elements of direct costs, such as the costs of clothing and transport, cannot be easily affected by governments or other service providers. The indirect costs are even more difficult to compensate by such means. Thus, for the very poorest households with numerous children, school enrolment in many countries will probably remain patchy. As countries develop and become richer (provided that distributional policy facilitates income growth for the poor), indirect schooling costs will become smaller relative to household incomes, and enrolments among the poorer segments of

the population will, accordingly, rise. But these enrolment benefits of income growth, delivered by the development process, may take a good many years to materialize.

Educating children in extreme poverty situations: does gender play a role?

Furthermore, and more worrisome for the achievement of the international development targets, income growth that is dependent upon market processes alone risks excluding those in extreme poverty, because poor people do not participate in these processes. These groups, having neither significant incomes nor assets, find themselves ineligible for credit. For them, all available household labour may thus be needed in order merely to subsist. Thus, even where schooling is fee-free, the costs of sending children to school for these households are relatively greater than the costs for households that are relatively better off. Furthermore, such costs may be *absolutely* greater for the poorest households because they have to rely on child labour to a greater extent than the others.

As mentioned, the existing cost studies make no estimates for these kinds of 'demand-side' adjustments. Although the World Bank study explicitly states that its projections are based upon primary schooling being 'free', and although a set of policy options are mentioned which recognize the need to target the education of girls (World Bank, 2002, Box 5.1), these adjustments have not been integrated into the cost-estimation exercise. To what extent might this omission understate necessary costs?

Clearly, there is no easy answer to this question since the extent of private costs from school fees, other direct costs and opportunity costs varies significantly across countries, and there are no consistent data to assess their magnitude. Where school fees still exist, their removal implies increased costs to the state for each and every child, in a typical range of 5%–15%. Furthermore, as has been shown above, the African data suggest that the removal of both direct and indirect costs to the poor may require an increased cost to the public sector of up to 50% of current public expenditure per student for the families involved. If this is an upper bound to

the extent of subsidy needed, the costs follow directly from the proportion of poor households eligible for the benefits of the scheme. For example, if the government decided to provide a subsidy equivalent to 25% of existing public spending per pupil to the poorest 10% of children in areas where attendance rates were very low, this would increase unit costs across the system by around 2.5%. Arguably this would count as a fairly modest increased cost if it were instrumental in shifting net enrolments from 90% to a level closer to 100%.

Targeted income supplementation

The main instrument available to reduce the weight of private costs (once fees and other charges have been removed) is some form of targeted income-supplementation scheme (ideally progressive, and related to the poverty of the household), conditional upon school attendance. This could be designed either in the form of scholarships, or of income transfers linked to attendance and performance of designated children in school. Such schemes are likely to be needed to provide a 'short-cut' to achieving UPE, by accelerating the enrolment changes that may eventually be delivered by the process of economic growth. There are two additional reasons for using income supplements. First, they provide not only the means for directly securing enrolment growth among the poorest families, but also an additional way to achieve the poverty-alleviation targets required by the Millennium Development Goals. By facilitating a change in time allocation, away from child labour and towards schooling, they reallocate the incomes of the poor towards investment in human capital. This is crucial to securing not only short-run school attendance targets, but also longer-run income growth for poor households. Second, by facilitating more continuous school attendance among poorer children, income transfers can be instrumental in reducing rates of repetition at primary level. Evidence from schemes in Latin America, such as Bolsa Escola in Brazil,¹² suggests that the impact of income transfers on school efficiency can be substantial. Where this is so, savings in the average cost of primary school completion for poor households can substantially reduce the net public costs of an

income-transfer scheme. The implication is that such schemes could be partly self-financing through their impact in reducing repetition rates, and thus provide a useful additional means to support a rapid transition to schooling for all.

Programmes providing financial incentives for improving enrolments and gender equity in schooling have also been implemented, with donor support, in a number of African countries. These include the USAID-funded scholarship programme for girls in four pilot schools in Ghana, the GABLE fee-waiver programme for non-repeating primary- and secondary-school girls in Malawi (see Box 4.1) and the World Bank-funded scholarship programme for

12. See Lavinias (2001); and ILO/UNCTAD (2001).

Box 4.1. Gender and education policy in Malawi

During the 1990s Malawi introduced a large number of reforms aimed at increasing the participation and performance of girls in school. At primary level, most of these were associated with the Girls' Attainment of Basic Literacy and Education (GABLE) programme, launched in 1991 with the assistance of USAID. This sector reform programme aimed to promote system-wide change while also addressing gender disparities in primary schooling. Under the programme, disbursements of budgetary support were made on the condition that policy reforms would be implemented by the government.

Reforms to reduce the costs of schooling included school-fee waivers for non-repeating primary-school girls, which benefited about 1 million girls over a two-year period, and abandonment of the requirement that pupils should wear school uniforms. In 1993 a new policy on pregnancies was adopted, allowing schoolgirls to return to school after having had their baby. A social mobilization campaign was used with some success to counter negative attitudes towards girls' schooling. The curriculum and supporting textbooks were revised so as to remove gender bias. Gender training was offered to teacher trainers, primary-school advisers, and school personnel. Focus group discussions were conducted, which revealed that some parents resented that only girls were initially targeted, given that household economic constraints also strongly affected the schooling of boys. Furthermore, the new pregnancy policy was not supported by all schools, some of which continued to exclude young mothers in the belief that this served as a deterrent to others having children.

Nevertheless, the reforms did appear to stimulate the enrolment and persistence of girls in school. Over the three years 1990/91–1993/94, girls' primary enrolments increased much more quickly than those of boys (13% per year, as compared with 8%), and by the later year girls' enrolments exceeded boys' in grades 1 and 2 for the first time. Villages where the social marketing campaign had been held witnessed unprecedented increases in enrolments one year later, particularly among girls. The key to success seems to have been the way in which the various factors constraining the participation of girls in school were tackled simultaneously, in the context of a broad sectoral approach, in which other constraints to the development of the school system were also targeted.

Source: Kadzamira (2000).

Programmes targeting girls are not always popular.

secondary-school girls in the United Republic of Tanzania. This latter programme, begun in 1995, aimed to increase poor girls' participation in secondary education and to promote the effective participation of girls in secondary schools (Sumra, 1998), through selective bursaries, counselling, curriculum development and other gender-oriented improvements within the schools (Mbilinyi and Mduda, 1995). By 1998, 1,500 girls – representing approximately 1% of total female lower-secondary enrolment – had received support. The programme was successful in increasing female secondary-school participation, but less so in improving female school-achievement.

Gender considerations for policy in targeting

Programmes targeting girls are not always popular. Evidence from Malawi indicates that many parents resent girls-only benefit programmes, because boys from poor households are also often unable to attend school (Kadzamira and Chibwana, 2000; Wolf, 1995; Swainson et al., 1998). Furthermore, even with fee-waivers, it appears that very few girls from lower-income groups attended secondary school (Castro-Leal, 1996). Since the children

from higher-income families were more likely to obtain better primary-school grades than were children from poorer families, more of them continued to secondary school. In these circumstances, incentives would have been better targeted at needy, primary-level children. Careful identification of eligible groups, as happened in the United Republic of Tanzania, would have been an important condition for success. Although targeting is a difficult process, communities can usefully be involved in selecting the beneficiaries, and some of the target groups requiring financial assistance are relatively easy to identify.

Table 4.5 shows the estimated impact of the introduction of an incentive programme on the base year primary unit cost in six African countries where this type of policy has recently been proposed at primary level. The base-year costs equal the total government primary education expenditure per pupil for the year of data collection. The proposed incentive programmes mainly concerned rural girls, and they provided a cost-per-beneficiary in the range of \$30–\$100. Strategies to provide incentives for girls were judged to be particularly important in Ethiopia, Ghana, Guinea, Mali and Senegal – countries with low enrolments and wide gender gaps. In Ethiopia, where demand for girls' education has been particularly low, for example, the proposed subsidies to cover the cost of stationery and exercise books, and of material for school clothes, would represent a substantial incentive for households to send their girls to school (Rose et al., 1997). If the subsidy were targeted at rural areas in disadvantaged parts of the country where enrolment is lowest, approximately 20% of school-aged children could benefit, thus generating a 9% increase in the base-year unit cost for Ethiopia.¹³ This figure is high, but the potential benefits in terms of girls' enrolments are substantial. Proposed subsidy programmes in other countries where demand for girls' schooling has been low could be designed so as not to have a major impact upon unit costs. For example, in Ghana, Guinea, Mali and Senegal, increases in unit costs as a consequence of the proposed subsidies for rural girls would range from 0.6% in the case of Senegal, to 5% in Ghana.

13. The average primary unit cost does not increase by the total cost per beneficiary because not all enrollees would receive the subsidy.

Table 4.5.
Effect of incentive programmes on primary unit costs for six African countries

Country	Intended recipients of subsidy	School children receiving incentive (as % total enrolment)	Proposed size of subsidy per beneficiary (in \$PPP)	Increase in primary unit cost (as %)
	1	2	3	4
Ethiopia	Rural girls in disadvantaged areas	20%	\$100	10%
Ghana	Rural girls from disadvantaged backgrounds	15%	\$61	5%
Guinea	Rural girls	13%	\$31	2%
Mali	Rural girls	2%	\$35	1%
Senegal	Rural children, particularly girls	2%	\$44	0.6%
Zambia	Rural girls (sanitary protection)	8%	\$32	4%

Column 1 describes the intended recipients of the subsidy; column 2 gives the percentage of total enrolment represented by this group in the base year (in each case, in the mid to late 1990s). Column 3 shows the proposed size of the subsidy (in purchasing power parity dollars) for each recipient, and column 4 shows the percentage increase in the base-year average weighted unit cost of the proposed incentive programme assuming the reported level of coverage (column 2) and base-year enrolment levels.

Source: Colclough et al. (forthcoming).

In general, then, the additional costs of removing gender inequalities need to be considered as a separate demand-side item which must be added to the mainly supply-side calculations of the costs of attaining UPE. This is particularly necessary for the poorest households in low-income countries. The examples given above are merely illustrative of what may be needed. But they suggest that effective incentive programmes for girls – or, more generally, children from poorer households – to attend school might add at least 5% to the average unit costs of primary schooling. In the 47 countries included in the World Bank study, this would translate into \$1.3 billion extra public spending by 2015, in comparison with spending in 2000, adding about \$0.4-\$0.6 billion to the average annual additional expenditures required.¹⁴ These increased costs would be likely to increase the size of the average funding gap presently projected in the World Bank study by perhaps 20% – although this would need to be calculated country-by-country to provide a reliable guide.¹⁵

The costs to education of HIV/AIDS

It is now seen with greater clarity than ever before that countries where HIV/AIDS prevalence is high are experiencing severe problems in maintaining progress towards the attainment of the EFA goals. This section outlines the risks that HIV/AIDS poses for the attainment of primary schooling for all, and its resultant cost implications. Some attention will also be given to the implications of HIV/AIDS for the attainment of the goals relating to the elimination of gender disparities in schools and improving educational quality, in so far as both of these are closely linked to primary schooling for all. Finally, some recent initiatives to assess the costs of HIV/AIDS to education sectors will be considered with a view to estimating the additional finances that must be raised globally for the attainment of EFA in an environment where the prevalence of HIV/AIDS is high.

Analytic framework

The HIV/AIDS pandemic has implications for both resource (supply) and cost (demand) in the achievement of the EFA goals. Resources are either mobilized domestically or come from external financing. The adverse macro-economic impacts of HIV/AIDS affect domestic resource availability in the public sector, and constrain the flow of resources from the private and household sectors. The epidemic also affects educational provision in ways that may increase or decrease the need for the financial resources that must be provided if the EFA goals are to be met by 2015.

Education systems are highly vulnerable to HIV/AIDS. The fundamental technology of one teacher with a class of ten to a hundred students has remained the same for thousands of years. Educators and education-support personnel constitute the largest proportion of public service employees worldwide. The vast numbers of students to whom they reach out constitute a significant proportion of the population. All told, an education sector may well involve a quarter or more of a country's population. Because it is so person-intensive, the sector is particularly exposed to the way HIV/AIDS can scythe its way through its personnel and operations, affecting the present adult generation in the persons of educators and support personnel, and the coming generation in the persons of learners.

An education system also comprises mainly young people. The majority of learners are in their pre-teens, teens, or early twenties, while a substantial proportion of educators are in their twenties and thirties. With the partial exclusion of those in their pre-teens, learners fall into the age groups where HIV infections most commonly occur, while educators are in the age groups where AIDS deaths are most frequent. These older age groups also encompass the parents and families of the majority of young learners, implying that for many learners participation in educational programmes occurs within the context of extensive HIV/AIDS sickness and death in their families and communities.

Adapting to these AIDS situations necessitates significant changes in school programmes. It also necessitates adjustments of management

Educators are in the age group where AIDS deaths most frequently occur.

14. For this group of countries, the impact on the financing gap would depend upon the distribution of these additional expenditures between India and the other countries.

15. It should be emphasized that a wide range of additional policy reforms will be needed to tackle gender inequalities in education effectively, beyond those discussed. These will include reforming curriculum, providing particular incentives for women teachers, organizing gender training, encouraging social marketing campaigns, and implementing a range of policies which extend beyond the limits of the education sector. A full treatment cannot be provided here. They will, however, bring additional associated costs which also need to be assessed on a country-by-country basis.

and policy frameworks at systemic level. Some of the response strategies have financial and cost implications that can be quantified. Others involve responses that impinge on costs, but in ways that are difficult to quantify. Still others have qualitative dimensions that will not affect costs until such time as specific interventions are made to respond to them.

The resource and cost implications of HIV/AIDS for the achievement of the EFA goal of good quality primary schooling for all will be examined, therefore, from the following five perspectives:¹⁶

- the impact of HIV/AIDS on resource availability for EFA;
- HIV/AIDS cost implications for learners;
- HIV/AIDS cost implications for educators;
- cost implications of adjusting education programmes to HIV/AIDS; and
- cost implications of the education management response to HIV/AIDS.

April 2001 – to allocate at least 15% of their annual national budgets to their health sectors – may limit possibilities for growth in education budgets. The World Bank has proposed that the financing measures for the attainment of the EFA goal of universal primary education of good quality include an increase in the allocation to education from the current average of 17.5% of national budgets to 20.0% (World Bank, 2002, Table A5.1). In high-prevalence HIV countries, other claims on national resources might jeopardize the possibility of securing and maintaining this increase.

Intrasectorally, HIV/AIDS is likely to augment the resource needs of other education subsectors. This is because the impacts on educators at these levels are as severe as at the primary school level, but the costs of replacements and training are considerably higher. Because much teacher specialization occurs at post-primary levels, the loss of mathematics or physics teachers, or of third-level lecturers in specialized areas, is difficult and costly to absorb.

The impacts of HIV/AIDS on human resources in society could also generate a need at secondary and tertiary levels to increase numbers, at least in certain areas, to make substantial curriculum modifications, and to introduce new areas of study and practice. AIDS increases the need for, but reduces the supply of, qualified individuals in certain skilled areas. This is very apparent in the health services, where in a climate of increasing demand, AIDS mortality is high. For instance, it is projected that in South Africa the demand for health services could be more than 11% higher in 2010 than in a no-AIDS scenario, whereas experience to date is that almost one-third of the nurses graduating from the University of Natal die within a few years of their graduation (Quattek, 2000, p. 41; Jones, 2001).

The premature death of adults in their most productive years depletes the skills base of society and calls for an accelerated production of replacements. But these replacements need to be equipped with current knowledge, understanding and skills, and with the more intangible qualities of resourcefulness and adaptability. This is because the AIDS-loss of qualified personnel makes it necessary for

If, due to the HIV/AIDS epidemic, more public resources are allocated to health and other sectors, the result could be a smaller proportion for education.

The impact of HIV/AIDS on resource availability for attaining EFA

Public resources

HIV/AIDS impacts on the resources needed for the attainment of the EFA goals in two possible ways: by causing the overall resource envelope to be smaller than it would otherwise have been, and by affecting the allocation of available resources. Models that have examined the impact of HIV/AIDS on national economies generally show that the annual GDP growth rate is lower than it would have been in the absence of AIDS, but they do not show any actual decline in GDP (Barnett and Whiteside, 2002, pp. 283 ff.). The lower growth rate means fewer resources than in a no-AIDS scenario for the various categories of public spending, including education (Bonnel, 2000).

The epidemic could also potentially affect both inter- and intrasectoral resource allocations. If the epidemic leads to an increased proportion of public resources for health or other sectors, this could entail a smaller proportion for education. Thus, for some countries, achieving the target set by African leaders at the Abuja Summit in

16. A more detailed summary and review of available estimates is given in Kelly (2002).

others to move over sideways and take over the responsibilities of departed colleagues. In an AIDS-affected society, graduates from vocational and other third-level programmes need more than their highly compartmentalized professional skills. They must also be flexible, adaptable and innovative in response to the needs of the fast-changing and unpredictable AIDS world.

Assessing the impact of AIDS on the skill needs of the labour market, bringing about the necessary curriculum developments, increasing the output of qualified individuals with the necessary qualities, and introducing new programmes of study and skills development; all call for additional resources or for new formulas in allocating existing resources. The cost implications of responding to them could affect the resources needed to progress towards the EFA goals. Following the past pattern of allocations and concerns, the EFA areas most likely to be at risk would be adult literacy and early childhood care and education. As Chapter 2 has shown, the allocations to these areas tend to be insufficient to mark significant progress towards the agreed targets. They could become even more insufficient because of responses to HIV/AIDS needs at the secondary and tertiary levels.

Private and community resources

HIV/AIDS affects the private and industrial sector negatively by reducing productivity, increasing costs, diverting productive resources, and affecting the market for business products. These factors combine to reduce the profitability of private enterprise, leaving it less well resourced to support educational developments. At the individual and household levels, the impacts are immediate and sharp.¹⁷ Many AIDS-affected households, which previously contributed cash and other resources for educational programmes, can no longer do so. The sickness, poverty and hunger that the epidemic has brought in its wake have left many rural communities so weakened that they cannot participate as in the past in self-help community activities for school maintenance and development. Resources, which in a no-AIDS situation would have provided for the development of the infrastructure needed for EFA, are no longer forthcoming.

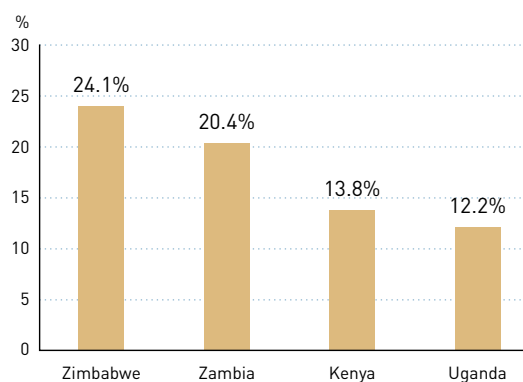
The cost implications of HIV/AIDS for learners

Student numbers

HIV/AIDS affects the size of the school-age population in three principal ways: fewer births occur because of the high death rates among adults aged 20–40, their biologically most productive years; HIV-infected women have lower fertility rates; and about one-third of the children born to HIV-infected mothers are likely to acquire HIV infection perinatally, with the majority of them dying before they reach school-going age. The combination of these factors results in the population of school-going age being smaller than it would have been in a no-AIDS situation. One recent projection suggests that by 2010, the population of school-going age in Zimbabwe will be almost a quarter smaller than it would have been in a no-AIDS situation, while that in Zambia will be one-fifth smaller (Figure 4.2).

By 2010, the population of school-going age in Zimbabwe will be almost one quarter smaller than it would have been without AIDS.

Figure 4.2. Projected reduction (%) in size of primary school-age population, 2000–2010



Source: World Bank, 2000, p. 3.

This implies that the financial burden for attaining universal primary education in high-prevalence HIV countries will be lower than it would otherwise have been. Fewer learners will require fewer teachers, fewer educational materials and fewer classrooms.

Projections for Botswana, South Africa and Zimbabwe suggest that HIV/AIDS will lead to actual population decline (and not just to a lower

17. See Whiteside and Sunter (2000), p. 89.

HIV/AIDS has led to the emergence of child-headed households: there is no adult and the children must fend for themselves.

rate of growth) in the coming few years, while demographic projections for Swaziland suggest that the population of primary school students will begin to decline absolutely from 2007 (Stanecki, 2000; Swaziland, 1999). Should this occur, the costs of educational provision would in principle be lower than the current costs.¹⁸

Children affected by HIV/AIDS

HIV/AIDS affects school participation for three different groups of children, making it difficult for them to enrol in or complete school, or to attend school on a regular daily basis. The first group – those who themselves are infected with HIV – will not be large. Projections for South Africa are that fewer than 1.2% of school-age children in any calendar year will be HIV-infected and that a much smaller proportion will be carrying the burden of AIDS illnesses (ABT Associates, 2001, p. 49). The extent to which such children will enrol in school, or continue once they come to know their HIV status, is not known. The school participation of infected children might imply some additional costs (such as for transport to facilitate their medical supervision). Their families might also need subsidies that would encourage school attendance on the part of the infected children and that would cover some of their medical costs. But given that the percentage of infected children would be small, these costs would also be relatively small.

The two other groups – orphans and HIV/AIDS-affected children – however, are much larger, and many factors prevent them from attending or completing school. Moreover, the epidemic is increasing the salience of these factors. Chief among them are:

- *Cash costs*: poor families, in rural areas and urban shanty towns, have always found it difficult to meet the cash costs associated with schooling. HIV/AIDS aggravates this difficulty by leading to losses in production, decline in family incomes, and increased medical costs.
- *Family and household responsibilities*: a significant proportion of households, particularly in rural areas, finds it difficult to do without the contribution to the household economy that comes from the labour of children, particularly girls. Because it impacts

negatively on the household economy, HIV/AIDS has increased this situation.

Orphans carry an additional quota of psychological, social and material difficulties. The emotional loss they experience at the death of a parent is compounded by the dislocations they subsequently undergo. Within their new surrogate family, orphans are frequently at a disadvantage compared with the biological children. Micro-studies of small communities show that orphans frequently come last in line when food is being apportioned, carry a disproportionately large share of household chores, and do not participate in school to the same extent as children who are not orphans. They also experience greater health risks than non-orphaned children and are more likely to be stunted and malnourished (Foster and Williamson, 2000, p. S281).

HIV/AIDS has also led to the emergence of child-headed households in which there is no adult and where the children must fend for themselves. Access to school is on a very precarious footing for children in such households. There may be no way of meeting school-related costs, or nobody may be free to go to school because everybody must work to generate the resources needed for survival.

Cost implications

To ensure that the EFA goal of primary schooling for all can be met, it is necessary to ensure that every orphan or child affected by HIV/AIDS can attend school and complete the education cycle. Fees, school-related costs, the salience of their labour in the household and the additional burdens experienced by households that provide orphan care, collectively constitute the principal obstacles to the full participation of these children. The full school participation of orphans and HIV-affected children will thus depend particularly heavily on removing all compulsory cash costs associated with school attendance, and upon the provision of targeted subsidies to mitigate the direct and indirect costs for households with orphans.

The cost of any social subsidy scheme depends on two factors: the size of the target group and the amount of the subsidy. This Report takes the

18. Contraction in the numbers actually attending primary school is already manifesting itself in South Africa's most populous province, KwaZulu-Natal, which is also the area the most affected by HIV/AIDS with an antenatal HIV-prevalence rate of over 36% in 2002. School costs and a recently implemented policy on the age of Grade 1 enrolment have made their own contributions to this decline, but South African experts believe that HIV/AIDS is also having a of major impact because there are fewer young women of child-bearing age. See Badcock-Walters et al. (2002).

position that the subsidy programme should target all orphans (these will normally include those in child-headed households) and all children from poor families that have been affected by HIV/AIDS. There is no strong evidence to suggest that paternal orphans are less disadvantaged educationally than maternal or double orphans.¹⁹ Preferably, therefore, a target group defined by orphan status should extend to all orphans.

The case for the inclusion of other vulnerable children is also strong. First, because of its impacts at the household level, HIV/AIDS is making it more difficult for children from families where there is infection to participate or continue in school. Second, targeting orphans only and excluding other vulnerable children runs the risk of putting orphans into a special class that would accentuate their sense of being different, increase their social and psychological problems and expose them to subtle forms of discrimination.

In its simulations for the costs of attaining the EFA target of universal primary education of good quality, the World Bank (2002a) includes provision for orphan support, but limits this to maternal and double orphans. The Bank's AIDS Campaign Team for Africa (ACTafrica) seems to have adopted the same approach in estimating the costs of scaling up HIV programme activities across Africa, defining orphans as those under 15 who have lost a mother or both parents to AIDS (World Bank, 2001, p. 16). This is in accordance with the definition given by UNAIDS in 2000 (UNAIDS, 2000b, p. 120), but more recently UNAIDS has defined AIDS orphans as children aged 0–14 who have lost one or both parents to AIDS (UNAIDS, 2002d, pp. 8 and 204).

Extending the meaning of AIDS orphans to include all who have lost one or both parents to AIDS would greatly increase the costs for orphans included in the Bank's simulations. The published costs are global estimates that include costs arising from AIDS-related teacher provision. However, it is relevant to note that orphan estimates for 34 countries in 2010 show that maternal and double orphans are likely to account for approximately 55% of the total number, and paternal orphans for 45% (Hunter

and Williamson, 2000). On this basis, the increased costs of including paternal orphans in the simulation would amount to approximately \$100 million per year (see Box 4.2).

In the absence of good data on the number of other vulnerable children who would need assistance, extending the estimates becomes very much more difficult. In sub-Saharan Africa, there were 42 million out-of-school children in 1998, and in South-East Asia 46 million (UNESCO, 2000). At that time, the adult HIV-prevalence rate was 8.0% in sub-Saharan-Africa and 0.7% in South and South-East Asia (UNAIDS, 1998). It is not unreasonable to assume that 8% of the out-of-school children in Africa belonged to families where there was HIV or AIDS, and 0.7% of those in South-East Asia. Application of these figures suggests that the number of out-of-school children from HIV/AIDS-affected families could be approximately 4 million. Orphans could, of course, be included in this number. Although it may be on the low side, the figure provides a starting point for estimating the number of children from AIDS-affected families who would need the incentives of subsidies to promote their school participation.

There are considerable differences in the size of subsidy proposed for orphan support. The World Bank (2002, p. 41) applies 'a fixed rate of US\$50 (in 2000 prices) per year per maternal or double orphan to the estimated population of such children in the school-age population'. The Bank's earlier ACTafrica document proposes US\$9–\$35 as the cost per child for community assistance with living expenses, and US\$25–\$33 as the costs per child for school expenses (p. 59). The latter, however, is a weighted average of primary and secondary school costs based on estimates from the United Republic of Tanzania. Moreover, while the school expenses of orphans and other vulnerable children would represent a cost to an education ministry, this cost arises in the attainment of the EFA target of free primary education and is not, in itself, determined by the HIV/AIDS situation.

A further estimate has been made by the Center for International Development at Harvard University, which proposes a community support programme for orphans costing US\$250 per

The full school participation of orphans and HIV-affected children will depend heavily on removing all compulsory cash costs for schooling.

19. For example, in twenty-two (out of twenty-eight) countries in Africa, Asia and Latin America, orphans had lower enrolment rates than non-orphans. In eight of these cases, only maternal orphans had lower enrolment rates. However, in four cases, only paternal orphans had lower rates, while in a further eight cases, the sex of the parent was unimportant (Ainsworth and Filmer, forthcoming).

Box 4.2. Major elements of AIDS-related incremental costs for the achievement of universal primary education

Areas for inclusion

Teacher-related: Training of replacement teachers; death benefits for deceased teachers; temporary teacher appointments to cover for extended absenteeism of teachers on sick leave.

School programmes: (1) Full curriculum implementation of HIV preventive education, including the production of learning materials and the establishment of this area as a professional subject for teacher preparation programmes in colleges and universities; (2) The provision of a cadre of qualified counsellors and the development of a counselling module for inclusion in teacher preparation programmes; (3) introducing further primary curriculum reform.

Support to orphans and vulnerable children: Providing incentives for orphans and for children from poor families with an AIDS sickness or death.

Estimates

Teachers. Death benefit payments and costs of training replacements for deceased teachers: \$150 million annually

Costs of system for the training and hire of temporary teachers to cover for those who are terminally ill (estimated at half the costs of the absent teachers): \$150 million annually

School programmes. Costs estimated as the mean of the low and high projected costs for the ACTAfrica youth intervention programme. Programmes for secondary teachers and out-of-school youth replaced by provision of educational materials, the extension of counselling, and curriculum adjustments in primary schools: \$250 million annually

Orphans and vulnerable children

- Based on World Bank estimated subsidy level of \$50 for each child each year
- Maternal and double orphans (2.5 million children): \$125 million
- Paternal orphans (2 million paternal orphans): \$100 million
- Children from families with AIDS (4 million children: assumptions in text): \$200 million

Summary: Total annual costs

Replace teachers	\$150 million
Temporary teachers	\$150 million
School programmes	\$250 million
Maternal and double orphans	\$125 million
Paternal orphans	\$100 million
Children from AIDS families	\$200 million
Grand Total	\$975 million

child per year (CID, 2001). Bearing in mind the median per capita GDP of US\$413 in the World Bank's sample of 33 countries (World Bank, 2002a, p. 29), this is almost certainly too high.

In the absence of other estimates that can be substantiated, there is merit in accepting the figure of \$50 proposed by the World Bank. Applying this to the estimated number of children from HIV/AIDS-affected families, whose school participation may be contingent on the receipt of a subsidy, would add US\$200 million annually to the AIDS-related EFA estimates produced by the Bank.

The cost implications of HIV/AIDS for educators

HIV/AIDS affects educators through deaths, the movement of teachers into other areas of work, sickness, absenteeism, workload effects and levels of morale.

Permanent loss of educators

There are two channels through which HIV/AIDS leads to the permanent loss of educators to an education system and teachers to classroom work, namely death and withdrawal from the teaching profession. Although some evidence seems to point to increased teacher mortality in the presence of HIV/AIDS, a more guarded view is that the rate of HIV infection among teachers is the same as in the rest of the adult population. But even in this view, the loss of teachers to AIDS may be very considerable. A model for Zambia predicts that, given the HIV prevalence in the adult population, the number of teachers would rise from 37,000 in 1999 to 50,000 in 2010, while in a no AIDS scenario the number would have risen to 59,550 (Grassy et al., 2002).

While the absence or death of non-teaching educators can seriously weaken an education system, the death of a teacher in active service brings immediate negative classroom consequences. Sometimes these are irreversible. Unless there is immediate replacement, something that seldom happens in the most severely affected countries, a whole class will be left without a teacher for a considerable length of time. This teacher loss puts at risk the very possibility of offering education to all children. Studies from West Africa report that teacher mortality due to AIDS led to 119,000 school-age children in Côte d'Ivoire receiving no education in 1997/98, and to 107 primary schools being closed in the Central African Republic (Fassa, 2000).

Absenteeism

For several years after initial infection, most HIV-infected people remain clinically healthy. But eventually the virus destroys so much of the immune system that the infected person becomes susceptible to infections that a non-infected person would normally be able to ward

off. This leads to episodes of illness, followed by periods of apparent good health. The periodic bouts of illness usually increase in number and duration over time until they fuse and become almost continuous. Infected teachers are unable to teach when they experience these illnesses. This leads to frequent 'casual' absenteeism on their part, and eventually to their being placed on formal sick leave. Drawing on research at the Imperial College, London, the World Bank uses the estimate that an infected person is likely to be unable to teach for a total of 260 days prior to death from AIDS (World Bank, 2002a, p. 41).

AIDS also leads to considerable absenteeism on the part of healthy teachers. Two factors contribute to this: caring for sick relatives at home, and attending funerals. Since the burden of care falls mostly on women, female educators and office staff frequently find themselves pulled between the demands of their professional work and attending to sick persons who require almost round-the-clock care. In addition, de rigueur participation in funeral rites for relatives, colleagues and community members leads to teachers being frequently absent from class, sometimes for days on end.

Cost implications

Education systems that are losing teachers, whether through death or early retirement, must make good those losses through the training of additional teachers. Otherwise the education systems will not be able to provide education for all who are in need; moreover, the quality of that education will suffer. Additional training is a cost that is attributable to the impact of HIV/AIDS on teachers themselves and on the workforce in other areas. The replacement costs can be estimated, firstly, from knowing the number of teachers who are likely to leave the system permanently and prematurely because of death or taking up appointments elsewhere, and secondly, from knowing the training costs.

Account must also be taken of death benefits, payable on behalf of teachers who die while in service, to which an education system may be contractually obliged. Anecdotal evidence from Malawi and other countries is that meeting these obligations (by providing coffins, transport and

cash) is crippling the operations of district education offices which find the outlays for these purposes absorbing the resources that would otherwise have supported school supplies and inspections.

Absenteeism due to AIDS-related sicknesses represents a major loss to education systems. Since no benefits accrue from the salaries paid to educators for the periods of absence, the systems lose the benefits of these resources. If they provide replacement teachers to cover for those who are absent, they will also face additional financial costs and these costs will be attributable to HIV/AIDS. In high-prevalence HIV countries that have not yet attained universal primary education, education systems seldom have the resources to provide replacements. Hence in these countries teacher absenteeism because of HIV/AIDS imposes major declines in quality and efficiency, which will further delay the achievement of the EFA goals.

Impact on the cost of training

For several reasons, HIV/AIDS is likely to boost the overall costs for training teachers.

- Teacher-training institutions (colleges and universities) will suffer AIDS losses among their staff in the same way as schools, but securing replacement staff will be slower and more costly than at school level.
- An enlarged and possibly accelerated training programme will be needed to make good the number of teachers and teacher trainees lost to AIDS.
- There will be need to adapt the training programme to make future teachers appropriately competent to teach understanding of and response to HIV/AIDS.
- Higher mortality of professionals in other sectors will increase the mobility of surviving teachers, further increasing the unit training costs of those who stay in the schools.

A report made to the South African National Conference on HIV/AIDS and Education in May–June 2002 indicated that while South Africa was currently training about 3,000 teachers each year, by the end of the decade, without ARV drug intervention, more than 20,000 would need to be

When education systems lose teachers, they must make good those losses by training additional teachers.

Education programmes should seek to empower learners to live healthy, sexually responsible lives.

trained. In the same country, more than 30% of nurses have been dying within three years of completing their studies. It may well be the same for teachers, especially women. The implications of these phenomena for teacher training are huge. Yet little thought has been given on how best to address these needs, and even less has been given to the cost implications of satisfactory and feasible responses.

One simulation for Zambia projects that teacher absenteeism due to HIV-related illness will result in the loss of 12,450 teacher years or close to 20 million teacher hours over the period 1999–2010 (Grassly et al., 2002). At a pupil-teacher ratio of 40:1, this is the equivalent of 498,000 children being left without classroom instruction for a year.

The absence of a system for the placement of temporary teachers is a problem facing many countries. More problematic is the fact that a pool of suitably qualified individuals available for temporary appointment does not at present exist. Its creation would imply costs for training and for temporary personal emoluments. Even though the salary costs of such temporary teachers would be less than for a comparable number of qualified permanent staff, their provision would represent a major additional AIDS-originated cost in ensuring that all children have access to primary education of good quality.

The cost implications for adjusting education programmes to an HIV/AIDS context

HIV prevention education

In a world where HIV/AIDS is so dominant, schools and education programmes have a cardinal responsibility to equip those for whom they have responsibility with the knowledge, skills, attitudes and values that will reduce the likelihood of their acquiring or transmitting HIV infection. This means that education programmes should seek to empower learners to live sexually responsible, healthy lives.

The first and basically correct response of education ministries to the HIV/AIDS crisis has been to strive to incorporate aspects of HIV/AIDS, sexual and reproductive health (SRH), and life skills education into the school curriculum.

Studies from seventeen countries show the concern of education ministries to integrate these areas into school programmes with a view to the promotion of behaviour change (ADEA, 2001). However, for a variety of reasons, 'the school system . . . has failed to develop a coherent, comprehensive approach to HIV/AIDS and, more generally, SRH education' (Bennell et al., 2002, p. 43). The root problems arise from:

- a curriculum approach that does not acknowledge HIV/AIDS and SRH education as a professional subject area in its own right;
- curriculum design that tends to spread HIV/AIDS, SRH and life-skills education thinly across a number of carrier subjects and fails to make the all-important links with health education and health services;
- teaching methodology that places reliance on whole-class teaching in formal settings, and to some extent with examination performance in view, but with little room for peer teaching, the participation of communities, or the involvement of persons living with HIV/AIDS;
- teachers feeling inadequately prepared to teach this area, and being reluctant to deal with sensitive and, in some cases, taboo topics; and
- inadequate curriculum and teacher support, with insufficient (if any) accurate and good quality teaching and learning materials, and little provision for systems of back-up guidance, training, teacher support structures, monitoring and evaluation such as other subjects receive.

The potential of curriculum changes to empower school learners to avoid HIV infection will remain severely compromised until these issues have been adequately addressed and HIV/AIDS education has been fully professionalized. Such provision cannot be made without incurring costs.

Cost implications

UNAIDS has enumerated some of the variables affecting the costs of school and education HIV/AIDS programmes (UNAIDS, 2000a, b, pp. 16, 17). In a somewhat modified and amplified form these include:

- personnel: required for consultancies, establishing and maintaining a corps of trainers, providing backup guidance and teacher support structures;
- programme development: the amount of time and type of work invested in developing HIV/AIDS school curricula and supporting materials;
- production and distribution of educational materials: the quantity and quality of educational materials produced for each student and teacher covered by the programme;
- training school teachers: workshops and other training sessions for school staff; and
- monitoring and evaluation, conducting impact assessments, and other forms of research.

The World Bank simulations (2002a) make no express provision for activities of this kind. The model does, however, anticipate improvements in service delivery and envisages that one-third of total recurrent spending on primary school services will be dedicated to non-teacher salary inputs (administration, support services, textbooks and other pedagogical supplies, along with subsidies to encourage the school attendance of children in difficult circumstances). The proportion is said to be adequate to cover whatever costs may be involved in the provision of HIV/AIDS preventive education. Such an approach, however, could put high HIV-prevalence countries at the disadvantage of being left with a smaller share of their non-salary resources for other quality-enhancing inputs.

ACTAfrica (World Bank, 2001) examines the costs of HIV/AIDS education programmes for those in schools and for out-of-school children and youth. For education programmes aimed at learners in primary schools, the cost per teacher trained is either US\$75, for a simple programme and the provision of basic materials, or \$200 per teacher for a more sophisticated programme that includes the development of training materials and the establishment of the school curriculum. The cost per secondary-school teacher is given as US\$121 for a simple programme and US\$241 for a more extensive programme. Finally, it is estimated that it would cost US\$8.–\$11.80 per person reached to provide suitable peer

education for out-of-school children and youth (in the age ranges 6–11 and 12–15). The overall costs of extending coverage by 2005 so as to reach 60% of the primary-school teachers, 80% of secondary-school teachers, 15% of out-of-school children aged 6–11 and 50% of those aged 12–15 are estimated as US\$211–\$313 million annually for all of sub-Saharan Africa (World Bank, 2001, pp. 54, 34).

Although substantial, these costs are not sufficient to provide coverage of the entire target groups. Nor do they include provision for the production and distribution of textbooks and teaching materials, for providing the back-up support required, or for developing and establishing an appropriate curriculum at college and university levels for the preparation of college lecturers and professional pre-service training of teachers. If the ACTAfrica cost estimates were apportioned equally over primary, secondary and out-of-school youth education, that estimate for primary education would be of the order of US\$90 million annually, or an average of more than US\$2 million per country. Education ministries might be reluctant to draw this amount – which would be far from sufficient to meet all the needs – from the resources for non-teacher salary inputs.

Responding to trauma and psychological needs

The trauma so frequently generated by HIV/AIDS has become a major care and support issue within schools. The experience of psychological distress or discrimination causes some young people to discontinue their education or to participate erratically. Others may find that they have more difficulty in learning. Prior to the advent of widespread HIV/AIDS, teachers encountered these problems less frequently. But with AIDS it is different and it is worse. The epidemic makes schools home to increasing numbers of intellectually, socially and psychologically dysfunctional learners (Coombe, 2001, p. 20).

However, not enough action has been taken, or even planned, for the establishment of the necessary psychological support systems. The work of school guidance personnel pertains

The trauma generated by HIV/AIDS has become a major care and support issue within schools.

Eleven countries stated that they had no social support programme for AIDS-infected or -affected learners.

more to providing vocational guidance than psychological support. A survey of education ministries in thirteen SADC countries, conducted in 2001, shows awareness of the problem and the inadequacy of the steps being taken to deal with it. Eleven countries stated that they had no programme of social support for infected or affected learners. Twelve also stated that neither teachers affected by AIDS, nor those who are dealing with AIDS-affected children, were being helped to cope (SADC, 2001). Such support as was available came through ad hoc, under-funded and uncoordinated NGO activities.

Adding up the costs

The principal variables that have a bearing on the additional costs that HIV/AIDS entails for the achievement of EFA goals are:

1. training additional teachers to replace those dying from AIDS;
2. providing death benefits that education ministries must pay to those who die while still in service;
3. mainstreaming HIV/AIDS within the curriculum, principally through the introduction of HIV preventive education;
4. developing, producing and disseminating textbooks and learning materials for HIV preventive education;
5. mainstreaming HIV/AIDS into programmes for teacher preparation;
6. managing functions and activities for propelling a proactive response from the system;
7. increasing capacity to provide counselling;
8. re-orienting primary education curricula; and
9. providing incentives to stimulate school participation by orphans and other children affected by HIV/AIDS.

Simulations have dealt principally with the first, second and final items on the above list. They have also given much attention to the costs that teacher absenteeism represents for education systems. But as already indicated, the absence of teachers on prolonged sick leave or for other AIDS-related reasons, will have incremental cost

implications for the achievement of EFA goals only in circumstances where payments are made for temporary teachers to cover for those who are sick or absent. Severely affected countries need to make provisions to do so.

Within the context of the achievement of EFA goals, the cost implications of items 3 to 8 in the above list have not been incorporated into any model, and no attempt has been made to estimate their costs at either national or regional levels. This is not because they are not important, but because of difficulties in getting bases for the cost estimates and because there may be some misapprehension that the costs of these 'soft' items may be dwarfed by teacher and orphan costs. The ACTAfrica estimates for the cost of extending the coverage of youth activities, although not cast in an EFA framework, suggest that the curriculum and various school programme costs might well exceed those involved in teacher replacements and may well be comparable with those arising from absenteeism estimates.

Ensuring the achievement of EFA goals also necessitates attention to demand factors, especially on the part of children who are in any way disadvantaged by their personal encounter with HIV/AIDS. Orphans stand out clearly as a category that should be supported, with the support extending to all orphans of school-going age. But orphans are not the only children that AIDS puts at a disadvantage in relation to living conditions and schooling. Children from poor families who have experienced AIDS are also in need of incentives that improve their living conditions and encourage their school participation.

Thus the cost implications of HIV/AIDS for the attainment of EFA goals arise from four broad areas:

1. incremental teacher costs for the training of additional teachers to replace those lost to AIDS and for the payment of death benefits;
2. the costs of training and paying temporary teachers to supply for those on extended periods of sick leave;

3. incremental school and education programme costs for mainstreaming HIV/AIDS and responses to it into the curricular and other areas of school life; and
4. orphans and vulnerable children costs for social subsidies to encourage or enable the school attendance of children from families affected by AIDS.

Estimates summarized in Box 4.2 suggest that the annual spending on these areas should be in the order of US\$975 million. This figure is 74% more than the World Bank (2002a) estimated as the additional AIDS-related costs for 33 African countries. The increase is due principally to making allowance for education programme costs and increased coverage of orphans and other vulnerable children. The continued spread of HIV infection, even in countries where prevalence is already very high, is commentary enough on the failure to date of education programmes to make a significant impact. Widespread, almost implacable, denial, extensive discrimination, combined with potentially lethal lack of information, also indicate that education messages are not getting through. It is unlikely that they will do so until education programmes that respond in manifold ways to HIV imperatives are resolutely mainstreamed into school systems. The funding needed for this has not yet been forthcoming. The Dakar Framework for Action called on the international community to 'implement as a matter of urgency education programmes and actions to combat the HIV/AIDS pandemic'. This cannot be done without mobilizing sufficient identifiable resources for establishing and running such programmes.

Dakar also underlined the importance of ensuring that children in difficult circumstances have access to and complete primary education of good quality. HIV/AIDS has placed huge and increasing numbers of children in exceptionally difficult circumstances. Some it has orphaned. Others it has marginalized and placed at high risk of being bypassed by educational provision. The future of these children, who form a very significant proportion of the next generation, will depend heavily on resources becoming available to safeguard their schooling.

HIV/AIDS and schooling: some conclusions

The World Bank (2002a) estimates have properly demonstrated the potential of the AIDS pandemic to add very substantially to the overall costs that individual countries will sustain in achieving the goal of primary schooling for all (along with gender equity and improved education quality). For high-prevalence countries, such as Rwanda, Zambia and Malawi, the Bank projections show that incremental costs due to AIDS will increase the recurrent budgets by more than 45%. The analysis in this chapter indicates that the budgetary impact of AIDS is even more dramatic. But large as this provision may appear, it must be further augmented by the numerous additional hidden costs, already alluded to, that HIV/AIDS entails, and by the cost implications of the pandemic for the attainment of the other EFA goals. Recognizing that the cost implications of HIV/AIDS are this extensive and pervasive may serve, better than anything else, to demonstrate the urgency of protecting the education sector against the ravages of the pandemic and of using its potential to extend a similar protection to society.

The continued spread of HIV infection is commentary enough on the failure to date of education programmes to make a significant impact.

Education in emergencies

Defining emergency education

The Dakar Framework for Action requires countries to 'meet the needs of education systems affected by conflict, natural calamities and instability'. The theme of 'education in emergencies' became important during the 1990s, in connection with the complex humanitarian emergencies in Afghanistan, Bosnia and Herzegovina, Rwanda, Somalia, the Sudan and elsewhere (Aguilar and Retamal, 1998; Retamal and Aedo-Richmond, 1998). Such 'complex emergencies' can last for years or even decades, creating a major barrier to the achievement of EFA. For UNESCO, an educational emergency is a situation of crisis created by conflicts or disasters which have destabilized, disorganized or destroyed the education system, and which require an

It was during the 1990s that complex humanitarian emergencies began to seem commonplace.

integrated process of crisis and post-crisis support (UNESCO, 1999). This emphasis upon the need to extend support beyond the short term – when special measures are needed – is consistent with the Dakar approach. International and national responses to emergency situations can include:

- education for refugees, in camp schools or national schools;
- education for internally displaced populations (IDPs), affected by conflict or disasters;
- education in situations of armed conflict, insecurity and instability;
- education in areas of large scale repatriation of refugees and IDPs; and
- reconstruction of regional or national education systems, after conflict or disaster.

Dimensions of the problem

During the 1990s complex humanitarian emergencies began to seem commonplace. By 2000, conflicts in Afghanistan, Bosnia and Herzegovina, Burundi, Iraq, Sierra Leone, Somalia and the Sudan, had each left more than 400,000 people as refugees in other countries. Other places generating similar flows of refugees during the 1990s included Rwanda and Kosovo, while 39 other countries had been the source for over 10,000 refugees in at least one year. By 2001, there were an estimated 15 million refugees in the world, including about 7 million in populations categorized as ‘assisted by UNHCR’ (UNHCR, 2002), and 3.7 million Palestinian refugees, assisted by UNRWA (the United Nations Relief and Works Agency for Palestine Refugees in the Near East). Many refugees were from the developing countries of Africa (3.3 million) and Asia (5.8 million). In 2001, some 500,000 persons fled from home-country circumstances which were so dangerous that they were recognized by asylum countries as *prima facie* refugees. No comprehensive data for refugee education exist, but in the year 2000, UNHCR supported the education of some 835,000 children at primary and 63,000 young people at secondary level, often through international and national NGOs working in refugee camps and settlements.

Most of the countries at the centre of complex humanitarian emergencies also suffered massive internal population displacements, although information on the dimensions of this phenomenon is less readily available. This is partly because there has been less international access to, and assistance for, IDPs. Many internally displaced persons live in camps or settlements similar to those for refugees, but others live in the homes of, or alongside, normal populations, in ways less conspicuous and more difficult to quantify. The world total of persons internally displaced as a result of conflict and human rights violations in 2001 has been estimated as at least 25 million people (www.idpproject.org) (over 13 million in Africa, over 4 million in Asia and over 3 million in Eastern Europe). In some situations, the national education system provides well-organized education for such people, but in many other places as well, the situation is bleak (Machel, 1996, 2001).

Natural disasters – flooding, hurricanes or earthquakes – affect education systems throughout the world. Sometimes there is major damage to the education system, as with the ‘millennium floods’ in Mozambique. In 1998, Hurricane Mitch destroyed schools in Honduras, leaving over 250,000 children at primary and 30,000 at secondary level without access to schooling; the Ministry of Education’s central offices were damaged and the bulk of the education archives were lost (UNICEF, 1999).

Conflict, insecurity and instability pose the greatest challenges to education. Educators often make gallant efforts to keep education alive during times of war or civil conflict. Classes are sometimes held in the open air, in homes and basements, or in damaged buildings of various kinds. The task of reconstruction follows. In 2000, almost 800,000 refugees in twelve major migrations returned to their homelands. Probably similar numbers of internally displaced persons returned to their places of origin. Even populations that had stayed in place throughout conflict or disaster had to work to rebuild their communities and schools. The tasks of reconstruction of education systems after conflict or disaster present major challenges to education planners and managers.

Emergency education classes are sometimes held in the open air, in homes and basements, or in damaged buildings of various kinds.

Education is needed early in a crisis, for psychosocial and pedagogical reasons, and to protect the children themselves.

Principles of response

Every crisis is different, and there are no sure formulas for successful response. The response to acute emergencies should always be designed from the local level, using some form of participatory appraisal, in order to achieve the best results. However, there is a need to seek a national consensus on key issues such as languages of instruction, curriculum, teacher training and remuneration, and the nature of educational decentralization. United Nations and NGO practitioners in the field of emergency education have identified general principles that improve the quality of response in emergency situations (see Chapter 3, Box 3.15).

Resource requirements for emergency education

Emergency education – a necessary bridge

Education in emergencies sits uneasily between humanitarian aid and development assistance. In acute emergencies, the key institutional actors may focus on survival issues, but the refugees or other emergency-affected populations themselves give a top priority to restarting education. There is now growing recognition of education as the 'fourth pillar' of humanitarian response (Midttun, 2000). Governments such as Sweden and Norway have publicly committed themselves to supporting emergency education as a matter of policy, but there are some others for whom this step remains to be taken. Emergency education is important if the lags between ending humanitarian support and the start of funding from development assistance budgets for reconstruction are to be minimized.

Education is needed early in a crisis, for psychosocial and pedagogic reasons and to protect children. It helps to provide a sense of normalcy and hope for the future, and prevents a cohort of children from missing out on education for life. Adequate resourcing is particularly needed because children affected by crisis or conflict:

- have special needs for good teaching and learning conditions to help them build a sense of achievement and self-esteem;

- need opportunities for recreation and expressive activities to help meet their psychosocial needs;
- may not receive the normal level of emotional and developmental support from their families;
- may not have access to books or other printed materials;
- may be in schools which have had their teaching-learning resources destroyed, and where the buildings need to be repaired and re-equipped; and
- may have teachers who are undereducated and untrained, and who require additional support through training and materials to cope with difficult and unfamiliar situations.

Community participation

Crisis-affected communities provide many of the resources for emergency education. This 'bottom-up' approach is advantageous in several respects; leading assistance agencies encourage it (for examples, see Bird, 1999; Brown, 2001; Lange, 1998; Midttun, 1998; Nicolai, 2000; Sinclair, 2001; Sommers, 1999, 2002). There is a psychosocial benefit when community members are active as teachers or otherwise support the process. Moreover, where public resources have become particularly constrained it is important to educate community members about the ways in which they can support schools and other activities for young people. Good practice programmes include:

- establishment of school or community education committees;
- appointment of experienced teachers and social workers from the crisis-affected community as head teachers and youth organizers, respectively;
- use of educated persons from the crisis-affected community as the teachers and youth leaders, and providing intensive in-service training and on-the-job guidance and supervision;
- recruitment of professionals from the community as project managers and supervisors of NGO assistance projects; and
- providing training for all of the above.

Fear and disruption make it difficult to maintain an atmosphere conducive to learning.

Initial roles for community education committees include organizing labour for clearing spaces for schools, erecting temporary shelter, identifying volunteer teachers and assessing the numbers of students for each year of schooling; later they can help with school management and development. The committees can also help to organize activities for pre-school children and for out-of-school adolescents and youth. UNESCO's Programme for Education in Emergencies and Reconstruction (PEER, based in Nairobi) developed the 'Teacher Emergency Package' (including educational supplies and materials) in Somalia in 1992, so that communities could initiate their own schools, despite the lack of government structures. UNESCO PEER saw school management committees as a way of bringing members of the community together as a force for peace (Retamal and Devadoss, 1998).

Human resources

In some displacement situations, experienced teachers move with their communities and can resume their teaching duties. However, in many crisis-affected communities, teachers are underqualified and untrained. Even trained teachers may have had limited exposure to modern teaching methods. Crisis may give the opportunity for a new approach to teacher training, which can help even inexperienced teachers develop the skills for effective teaching, as well as taking account of the special needs of children exposed to some form of crisis. As noted by Graca Machel (2001), 'fear and disruption make it difficult to maintain an atmosphere conducive to learning, and this can take a grievous toll on school morale. In Palestinian schools, surveys found that many teachers and students had trouble concentrating, particularly if they had witnessed or experienced violence or had family members in prison or hiding.'

Education programmes that focus on crisis-affected populations need to include a major component of carefully designed training for teachers and head teachers, for adult educators and for youth educators/youth group leaders. Such training is best provided 'in-service', through vacation and weekend courses, mobile trainers, and training of mentor teachers in the

schools or school clusters, while later there can be use of open and distance learning methods.

Crisis and reconstruction often imply that it is difficult for the government to meet the costs of teacher salaries. Donors have often been unwilling to support salary costs, preferring to provide forms of assistance which carry less risk of long-term obligation. Conventional objects of support, such as educational supplies and materials, the repair or construction of schools, or in-service and pre-service teacher training, are needed. However, recurrent support for teacher salaries is often critical to restarting the system.

Resourcing levels

In high-profile emergencies, donors may be willing to give generous humanitarian support. Such assistance to displaced populations is often channelled through NGOs, which can act quickly. By contrast, assistance to national government agencies, notably for reconstruction, may face problems of absorptive capacity and effective management.

The level of resourcing for emergency education programmes is critical for achieving sustainability. For displaced populations, UNHCR suggests that shelter, equipment and materials standards be developed by reference to the general level of well-run government schools in rural areas near the national capital, rather than the dysfunctional low levels often found in neglected rural areas where refugee camps may be located (UNHCR, 1995). If a large refugee or displaced population moves into an area with weak education systems, efforts to raise standards in that area, through mobilizing national and international resources, will be required.

As regards site planning for emergency schools, UNICEF's concepts of 'child-friendly spaces' and 'child-friendly environments' are helpful. Child-friendly spaces in Albania, for Kosovar refugees, and in tent cities in Turkey after the 1999 earthquake, meant grouping together basic services for mothers and children, including basic health services, early childhood care and development, schools, recreational facilities, psychosocial support, youth activities and mother

Donors must contribute to curriculum and textbook renewal in support of peacebuilding.

support. Emergency assistance may include imported 'kits' of educational and recreational supplies, although local procurement is preferable and brings benefits to the local economy (Sinclair, 2001). Where possible, heavy duty reproduction equipment for 'education resource centres' is commended (Aguilar and Retamal, 1998), permitting the reproduction of materials to meet urgent educational needs.

Governments facing reconstruction situations typically confront huge problems. Even the resources to formulate education needs, develop plans and make them known may be lacking. The Ministry of Education may lack furniture, typewriters, computers or even paper. Thus there is usually no lack of items upon which external resources can be quickly spent.

A major concern in post-conflict situations is to avoid replication of educational structures that may have contributed to conflict (Pigozzi, 1999; Tawil, 1997; Smith and Vaux, 2002; Isaacs, 2002). It is important that donors contribute to the 'softer' side of reconstruction, namely consensus-building on integrative approaches to education, curriculum and textbook renewal in support of peacebuilding, and investment in both in-service and pre-service teacher training. Life skills education, including education for peace, human rights and citizenship, are important in situations of protracted post-conflict displacement and reconstruction, and have resourcing implications especially for start-up (Gillespie, 2002; Baxter, 2001; Fountain, 1999; Johanessen, 2000; Talbot and Muigai, 1998). There appears to be an initial window of opportunity to initiate such changes, perhaps lasting 18 months (Vargas-Baron and McClure, 1998). The tasks of negotiating curriculum change for schools and teachers, writing and testing new textbooks, and introducing effective systems of teacher training, require commitments of five years or more.

Inter-agency cooperation is obviously needed to ensure the best use of available resources for acute emergency situations and reconstruction. However, estimating the likely annual resources required for such purposes is difficult. Most emergencies are unpredictable and the resources needed depend entirely on their

nature, scale and intensity. What is 'required', furthermore, is open to different interpretations. In Afghanistan, for example, the estimates of the international community were much lower than those of the Ministry of Education (Box 4.3). Even so, the \$100 million transitional requirements estimated by the international community exceeded both the commitments subsequently made and the annual average requirements for UPE in 2015 of \$70 million projected by the World Bank (2002, p. 59). These estimates, in turn, were dwarfed by the Ministry's stated need for some \$875 million over the two years to mid-2004.

It is difficult to draw conclusions more widely. However, recent history would suggest that at least four or five countries are likely to face major complex humanitarian emergencies during the course of the next decade, with many more experiencing disaster, conflict and instability to varying degrees. In all of these countries the costs of achieving the EFA goals would then be greater than at present predicted – because infrastructure, supplies and human

Box 4.3. Education reconstruction in Afghanistan

Two major needs assessments were conducted in early 2002, supported by the Asian Development Bank, World Bank and UNDP. These assessments were hampered by a lack of systematic data. The Ministries of Education and Higher Education lacked chairs, tables and paper, let alone office equipment and the capacity to collect data on country-wide needs. The best estimate was that 1.5 million children would return to school in March 2002, in response to the 'Back-to-School' campaign. Later estimates suggested that about 3 million children had been enrolled in school, including some 300,000 at secondary level. UNICEF distributed over 7,000 tons of educational supplies and materials in a few months, the largest such operation undertaken by the United Nations.

By September 2002, steps had been taken towards in-service training of teachers, renewal of teacher training systems and curriculum reform, but delays were caused, in part by a lack of basic resources within the Ministry of Education. The situation regarding payment of teachers and other staff remained fragile due to the severe constraints on government revenues, and the uncertain level of donor commitments. In July 2002, the immediate and transitional education sector requirements were estimated by the international community at \$100 million, while donor commitments then totalled only \$44 million. As of August 2002, the Minister of Education estimated immediate and short term requirements at \$171 million, with a further \$704 million needed by mid-2004. Meanwhile, planning and absorptive capacity remained limited by the delays in resourcing the Ministry itself and in training to update its staff.

Source: Sinclair (2002).

resources would be diminished. Moreover, the means of meeting these costs will be reduced by declining income flows, by human death and displacement, and by reallocation of potentially available resources from education to other, equally pressing, demands.

If the impact of such events were to increase the additional annual costs of reaching UPE by 25% in four or five countries, between \$0.4 - \$0.5 billion would be added to the average annual costs of UPE across all countries. This would increase the projected total costs by 2% to 3%, but if the affected countries were among those which are expected to face financing gaps, it would represent an increase in the Bank's projected funding requirement of around one-fifth. This would be a minimum impact since the capacity to resource education systems in these countries would have been negatively affected by emergency.

How much is really needed to achieve EFA?

All recent studies on the costs for achieving primary schooling for all by 2015 appear to have understated the real situation.

The analysis in this chapter indicates that each of the recent studies of the costs of achieving primary schooling for all by 2015 appears to have understated them – in some cases, substantially so. It is clear that the World Bank study is, from a methodological standpoint, the strongest of the three. It has a transparent framework that allows the possibility of supplementary analysis in a helpful way. Its data requirements are not extensive, and the main cost parameters that affect the development of education systems are given a central place in its design and operation. The two other studies also have strengths – both of them use national-level data and employ a generally cautious and sensible approach to the ways in which education systems can be reformed. However, the data they use, particularly the financial information, appear highly variable, and in some cases, unreliable. The generally higher cost estimates that emerge from the Bank study are, in general terms, to be preferred.

Nevertheless, the World Bank analysis oversimplifies the cost side – partly by investigating only six-year systems, irrespective of their actual length, and by omitting a number of countries from the analysis which appear, prima facie, to be likely to have some difficulty in achieving the goals. In addition, the policy reforms proposed for the education systems in the countries covered by the study – which directly influence their expected costs – appear to give less weight to implementation difficulties than they might. This is particularly so as regards teacher salaries – where the proposed mechanisms for their reduction, relative to per capita income, would present a very demanding agenda for the highest cost countries.

Two other aspects of the study hold critical importance for the projected outcomes. The first concerns the revenue side. This chapter has argued that the revenue assumptions upon which the calculations of financing gaps are based are optimistic. A government completely committed to reforming its approach to the delivery of primary schooling would probably still have difficulty sustaining the real expenditure targets for primary schooling sought by the Bank over a fifteen-year period. Much depends, however, upon progress with economic growth in the countries concerned, because healthy and sustained income growth would more easily deliver the increased resources sought. The study is silent about the growth assumptions it employs, so it is not possible to assess this part of its analysis.

On balance, however, public resources available to primary schooling in these countries appear likely to grow at a slower rate than assumed in the study. This, together with the omissions on the cost side, suggest that the size of the financing gap, from these sources, is likely to emerge as being substantially larger than projected. A figure of \$4.2 billion is suggested in the text, which is higher than that in the Bank paper by up to two-thirds.

This chapter has also shown, however, that there are at least three other major omissions from these cost estimates. The first concerns the demand side. There is a need to increase the

incentives for families – particularly those in the poorest sections of the community – to enrol girls in school. The analysis suggests that the additional expenditures required might amount to \$1.3 billion by 2015 in the countries concerned, which would increase the average annual funding gap by about \$0.5 billion over the period. Similarly, the analysis suggests that the estimates for the resource requirements of responding to the HIV/AIDS pandemic were underestimated to the extent of approximately \$0.4 billion. Finally, responding to the educational needs of countries in emergency situations might require additional resources of approximately \$0.5 billion on an annual basis for those among the poorest countries falling victim to emergencies. All this implies an annual aid bill of the order of \$5.6 billion per year being required to support the move to EFA, within the same kind of framework as that set out by the World Bank. This aggregate estimate for average annual aid requirements to support UPE with gender equality in good quality schools is more than double that given in the Bank document (World Bank, 2002a).

We are, then, some distance from being able to use the country-level resource requirement projections that are currently available as even a rough guide to aid requirements for securing EFA objectives. The national simulations should become the starting point for more country-level work, integrating new national planning effort and data to produce revised outcomes.

This chapter has shown that the 'bottom line' in all such approaches varies strongly with the assumptions used. All financing gap estimates are relatively small residuals that are sharply responsive to changes in the assumptions used to determine the size of the much larger aggregates of national expenditures and resources available. This implies that single-valued estimates need to be replaced by a range showing the extent to which conclusions change if the parameters turn out to be different. Applying this advice to the analysis presented in this chapter, it can be concluded that the level of required aid flows is almost certainly closer to \$5.6 billion than to \$2.5 billion. But more nationally informed work is needed to determine how closely accurate the former figure will turn out to be.

An annual aid bill of the order of \$5.6 billion per year will be required to support the move to EFA.