

**Efficient and Effective Funding Mechanisms for Achieving Education  
MDGs: Linking Inputs to Outcomes to Achieve Sustainable Results**

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## Acronyms

BoPS	Balance of Payments Support
DAC	Development Assistance Committee
DP	Development Partners
EFA	Education for All
EMIS	Education Management Information System
FTE	Full-Time Equivalent
FTI	Fast Track Initiative
GBS	General Budget Support
MDG	Millennium Development Goal
MoE	Ministry of Education
MoF	Ministry of Finance
ODA	Official Development Assistance
PMU	Project Management Unit
PRGF	Poverty Reduction and Growth Facility
SBS	Sector Budget Support
SWAp	Sector Wide Approach
TA	Technical Assistance
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Education, Science and Cultural Organisation
UNICEF	United Nations Fund for Children
UPE	Universal Primary Education

# Efficient and Effective Funding Mechanisms for Achieving Education MDGs: Linking Inputs to Outcomes to Achieve Sustainable Results

## 1. Introduction

The international community has committed itself to the achievement of the Millennium Development Goals (MDGs). The common view is that a mere continuation of present levels of external and national funding in countries that are far off achieving the MDGs, will not be sufficient for these countries to bridge the gap in being able to achieve these MDGs. Whilst the majority of the world's poor live in South Asia, with India having more people living in poverty than the whole continent of Africa (Foster and Keith, 2003, p.6), Sub-Saharan African faces the greatest challenges in reaching the Universal Primary Education (UPE) targets (Naschold, 2002, p.1).

Clearly, existing funding flows, both national and international, will need to be channelled and targeted more efficiently, to achieve more effective outcomes. However, even if great strides forward are made in increasing the effectiveness of external aid and national resources, they are unlikely to be of the order of \$50 billion per year, which is the estimated annual financing gap between 2001 and 2015 needed to achieve the MDGs stated in the Zedillo Report (UN, 2001). Approximately \$9 billion of this (18%) is needed annually to achieve the two education goals, which is more than four times the current amount Development Assistance Committee (DAC) donors are spending on education (Naschold, 2002, p.1). These estimates for education are based on an average annual cost per pupil. However, the marginal cost of reaching the last few percent of out-of-school children will be much higher than the average annual cost per pupil used to come to the crude estimate in the Zedillo report. Foster and Keith (2003, p.48) point out that if the rising marginal costs to extend education to hard-to-reach groups are taken into account, perhaps a total of \$130 billion will be needed per year for education alone, ignoring all the other MDGs. If this is the case for education, then the same approach is very likely to apply to the health and poverty MDGs. Thus, given these additional and possibly very high marginal costs of reaching the most remote areas to lift them out of poverty, Naschold comments that:

*“It is possible that the most cost effective way of halving poverty may be to focus resources on eliminating poverty in some key countries, while neglecting the rest.”*  
(Naschold, 2002, p.2)

Though many will argue that this is not an equitable solution, it may be the best compromise if the necessary resources cannot be found to lift everyone out of poverty.

The lower overall figure of \$50 billion per year to reach the MDGs could be achieved by doubling present levels of official development assistance (ODA). However, it is unlikely that this size of increase at a rapid speed will happen, particularly when looking at the recent trends in official aid given which show overall declines relative to rich country income of 30% in the last thirty years (Harford, Klein and Tilma, 2004, p.1), and more specifically a 7% decrease between 1990 and 2000 (Foster and Keith, 2003, p.49). Hence, two other solutions will have to be explored. Firstly, how existing aid coupled with national resources can be used more efficiently and effectively, and secondly, what alternative sources of financing can be considered to fund this gap.

## 2. Relative Efficiency and Effectiveness of Different Types of Funding Mechanisms

### 2.1 Current International Financing

The 1990s and the new millennium have seen changes in the way donors are financing aid. The move has been away from the more traditional projects with separate project management units (PMUs) and parallel financial systems, towards sector and general budget support (also known as programme aid), with donors giving money directly to governments and measuring performance in terms of sector or economy-wide outputs and outcomes. Not all donors have yet embraced this paradigm shift, but it is certainly becoming more popular as a way of distributing aid both in general terms, and more specifically to the education sector. Whilst programme aid is not new, with the IMF and World Bank following this approach during the structural adjustment period in the 1980s and 1990s (Foster, 2004, p.31), it is a new approach for many bilateral donors.

A recent study of 14 countries receiving General Budget Support (GBS) shows the following modalities being used for the disbursement of every \$1 of aid:

Direct donor spending (TA and direct payments) not recorded in balance of payments	\$0.30
Recorded in Balance of Payments, but not reported as part of Government spending	\$0.20
Aid earmarked to specific projects	\$0.30
Provided as Budget Support	\$0.20

If the highest users of budget support which are Uganda, Tanzania and Rwanda, are included, then in these countries, budget support accounts for around 40% of aid flows (Foster, 2004, p.15).

#### ***Budget Support v Project Support***

A negative feature of aid provided through traditional projects is that it tends to develop a parallel system of aid management devoid of significant government involvement. This means that for each project, there are separate financial systems, reporting requirements and audits. This produces many parallel systems, which take up government time to monitor, control and ensure release of funds, and does little to build the capacity of government to manage funds or their ability to absorb additional funds, due to the time spent undertaking the same activities separately for each project. Where countries are heavily dependent on aid, this can lead to a situation where development partners rather than government make decisions and implement policies, often producing a lack of long-term sustainability and national ownership. Naschold (2002) comments:

*“A doubling of aid is unlikely to be possible without better pooling of donor funds and harmonisation of reporting requirements. This would help to increase recipient’s capacity to absorb aid, as well as donors’ capacity to disburse it.” (Naschold, 2002, p.2)*

One of the main advantages of budget support is that it avoids creating these multiple parallel systems. Another advantage is that it is available to finance recurrent costs, which is the area of the budget that is often under high stress.

Notwithstanding these theoretical advantages of GBS over traditional projects, there is no empirical evidence yet to compare GBS aid with non-GBS aid and look at its relative effectiveness, though a general economic theory has developed around GBS promoting it as being more efficient in countries with robust financial systems, particularly those who are heavily dependent on aid. Despite this theory, an important question to pose is whether this shift in the way aid is delivered is *always* more effective than traditional projects, and whether it is appropriate in *all* contexts, or just in some. As Smith (2003) points out:

*“Education itself is about developing capacity. In no circumstances would we say that, to do this well, all schools need is support for their budgets. We expect to see a methodology and people with the skills to implement it, effort put into training, retraining, upgrading staff, developing new approaches and curricula, etc.” (Smith, 2003, p.7)*

He further argues that there are two issues for consideration in the GBS debate: firstly, to find the right balance between GBS and support for capacity building to ensure that additional funds are used well; and secondly, to ensure that support for capacity building is happening at the right levels of the education system i.e. at the level of the school not just at central Ministry level (Smith, 2003, p.9). He concludes by stating:

*“Unless ministry, local education authority and, more importantly, school managers and teachers genuinely acquire the capacity to plan and implement quality improvements, instead of facilitating the necessary reforms the donors’ push to move beyond SWAps to direct budget support may actually reduce the likelihood that the Millennium Development Goals and national targets will be achieved. Enabling and facilitating the acquisition of this capacity is the real challenge of the next decade.” (Smith, 2003, p.11-12)*

Hence, even if in the future, there is clear empirical evidence to show that GBS is a better form of financial aid, it is important that it is not seen as a panacea aid solution without a concomitant commitment to a detailed and realistic national capacity development plan.

### ***Choosing Between Aid Instruments***

There is a whole spectrum along which different Development Partners (DPs) can choose to position themselves as regards giving financial assistance to a country. Table 1 on the following page outlines this spectrum ranging from the traditional project approach through to GBS and Balance of Payments Support (BoPS).

Foster and Fozzard (2000, p.48) present a framework for choosing between aid instruments according to four categories: quality of macroeconomic and budget management, dependency on aid, quality of sector policies, and quality of sector management. They conclude that some form of budget support (either general or at a sector level) will be the most appropriate aid modality where a recipient government is committed to sound macroeconomic and sector policies, where there is strong capacity to implement these policies, and where the country is

**Table 1: Present Forms of International Financing**

<b>Aid Form</b>	<b>Description</b>	<b>Target</b>	<b>Financial Management</b>	<b>Financial Systems</b>	<b>Financial Reporting</b>
1. Traditional Project		Sector support – can only be used to support criteria outlined in the project document	Sectoral level, by donor through a PMU	Separate parallel system put in place by donor often requiring a second counterpart account	According to donor regulations and requirements
2. Projects Using Government Systems		Sector support – can only be used to support criteria outlined in the project document	Sectoral level, by donor		<ul style="list-style-type: none"> <li>• Separate donor system</li> <li>• Government system</li> </ul>
3. Sector Common Basket of Funds	Support provided to a specific sector (e.g. education) to assist funding an agreed sector policy and plan	Sector support – can be used in any way as long as the education sector plan remains on track	Sectoral level, through Ministry of Education (MoE)	Earmarked aid to the sector passing through donor basket account held by Treasury. Either reimbursement or advance of funds.	<ul style="list-style-type: none"> <li>• Commonly agreed donor system</li> <li>• Government system</li> </ul>
4. Sector Budget Support (SBS)	Support provided to a specific sector (e.g. education) to assist funding an agreed sector policy and plan	Sector support – can be used in any way as long as the education sector plan remains on track	Sectoral level, through MoE	Earmarked aid to the sector passing through the Central Bank Government education account	Government systems
5. Aid Financed Debt Relief			National level, through Ministry of Finance (MoF)		Government systems
6. General Budget Support (GBS) <b>Or</b> 7. Balance of Payments Support (BoPS)	Support paid into the Central Bank in foreign exchange (BoPS) or local currency equivalent of foreign exchange (GBS) conditional upon a country following an agreed macroeconomic programme	National support – can be used in any way by recipient as long as the macroeconomic programme remains on track	National level, through MoF	Paid into Central Bank in foreign currency (BoPS) or local currency counterpart (GBS) for use as Government funds	Government systems

heavily dependent on aid. In the latter case, which would include most of Sub-Saharan Africa, budget support will be needed since government revenue will be insufficient to adequately pay for staffing and operational costs. Foster and Keith (2003) point out that if Africa were to receive double its current levels of aid, then this would imply that a significant proportion of recurrent financing would have to be financed by this aid (Foster and Keith, 2003, p.6), which can only really occur if this aid comes through some kind of budget support. An additional benefit of budget support, where it is well coordinated and there are not too many conditions attached, is that it will reduce transactions costs compared to providing the same aid through multiple projects.

However, given that budget support is normally conditional on a country following and remaining on track with a macroeconomic reform programme supported by the IMF (often known as a Poverty Reduction and Growth Facility (PRGF)), Foster and Fozzard conclude that there is no real case for budget support where macroeconomic and sector policies are weak and remain so. In this case, donors should work with Ministries in developing sector policies through technical assistance and the more traditional projects, which will be more effective than budget support.

### ***Diversified Portfolio Approach***

Whilst Foster and Leavey (2001) conclude:

*“Different aid instruments are suitable for supporting different objectives, and interventions at macro, sector, sub-national, and project level may be needed.”*  
(Foster and Leavey, 2001, p.6)

the paradigm has shifted yet further since this early thinking on budget support. Rather than strong macroeconomic and budget management (otherwise known as reasonably transparent financial systems for budgets, monitoring and evaluation) being a pre-condition for budget support, its proponents now argue that the only way of strengthening weak financial systems is to use them and through using them, strengthen them. This is a very risky approach given that it is not tried and tested and given the lack of empirical evidence to show proven advantages of budget support as opposed to project support, especially in situations where financial systems remain weak.

An investor who wants to see maximum effectiveness of his/her investment is likely to invest in a wide range of funds, and have a mixed portfolio with some high risk funds, that on a good day may give high returns or on a bad day, give negative returns, and some lower risk funds that are almost guaranteed to give returns, albeit at a lower rate than the best outcome on the high risk funds. This would then mean that on average, s/he has a reasonable chance of some returns on his/her investment. Whilst aid cannot be viewed in an exactly parallel fashion, as it is not directly an investment on which donors are seeking returns, donors should nonetheless be looking at how to make the aid which they give, as effective as possible.

In light of this, we propose that particularly in Sub-Saharan Africa, where most countries still have weak, though sometimes improving financial systems, a variety of support should be provided so that donors can see that their aid is in a diverse portfolio, with low risk, higher cost projects and high risk, lower cost budget support. If this aid is split between central government, local government, and NGOs, then the returns to aid are more likely to be higher

in the short-term. In the longer-term, as different aid modalities are seen to be more or less effective in a given country, then the portfolio can be redistributed so that the most effective aid modalities are those through which the majority of aid is flowing. Thus, if GBS is shown to be the most effective form of providing aid, then donors in a given country can move more funds through this channel rather than alternative ones.

### ***Predictability of Aid***

A bigger challenge to governments receiving external aid is not so much whether it is in project or programme form, but how predictable, reliable, timely and complete financial flows are. Whilst domestic revenues may fluctuate somewhat, particularly in a country heavily dependent on agriculture, or one operating a cash budgeting system, the unreliability of budget support flows in countries which are heavily dependent on aid, can cause large disruptions to important recurrent expenditures like salaries and operational costs. Foster and Keith (2003) note:

*“Average shortfalls in aid receipts relative to the budget were equivalent to nearly 2% of GDP in a sample of 28 countries...Moreover, the shortfalls were greatest on programme aid, the untied funds of most importance for macro and budget management. Even countries that met policy conditions experienced large shortfalls.” (Foster and Keith, 2003, p.38)*

Any similar delays or shortfalls in disbursing money on more traditional projects generally have less of a negative immediate impact, as the majority of these projects are financing capital costs rather than recurrent ones.

### ***Sustainability of Aid***

Sustainability has been one of the main concerns aired in the development community with regards to aid funding. The view until recently has been that aid flows should be at sustainable levels so that if aid is cut, it will not have serious repercussions for the recipient country. However, with the large funding gaps that exist in EFA plans for many of the least developed countries which are far off from reaching the MDGs, “a large share of public expenditures will be dependent on external finance for many years to come.” (Foster, Ndaruhutse and Virtue, 2005, p.21). Therefore, in examining the issue of sustainability, it will be more important to look at it in terms of donor willingness to continue providing the necessary level of support with any reductions being phased in such a way that recipient country governments can adjust to the expected change without having to stop paying teachers or providing books. This relates sustainability to predictability as mentioned above. The real success of achieving sustainable aid flows lies in both predictability of aid flows as mentioned above, and in ensuring that aid contributes to building capacity at all levels of the education system to plan and manage with increased confidence in local ability and less dependence on external expertise.

## 2.2 National Financing

*“Most of the required resources will come from countries themselves. The biggest influences on the targets will be the economic growth that countries achieve, the extent to which the pattern of economic growth benefits the poor, the commitment of Governments to allocating increased resources to poverty reduction, and the efficiency with which those resources are used.” (Foster and Keith, 2003, p.46)*

National or domestic financing is another vital component of funding for UPE and Education for All (EFA) targets. Particularly in less heavily aid dependent countries, national financing may make up 95% of all recurrent financing and a significant proportion of development financing. Even in countries that are more heavily dependent on budget support, domestic financing will still normally make up around 60% of recurrent financing. In both cases, it is very important that governments prepare realistic budgets based on revenue forecasts and projected aid disbursements that are conservative rather than over-ambitious. This will ensure more timely and predictable releases of finances enabling a more planned and sustainable way of delivering services rather than a disjointed one that causes continuous interruption.

Governments can use domestic financing efficiently or inefficiently. One of the key factors when exploring the national financing of education MDGs is what priority education receives in a country vis-à-vis other sectors of the economy. If education is significantly underfunded<sup>1</sup>, then educational outcomes will be less than optimal given that there is an inefficient cross-sectoral allocation of resources. A similar issue relates to the priority of wage to non-wage expenditure. If virtually all resources are used to pay salaries and operational costs, very little money is then available for important quality inputs like books, teacher training, new classrooms to meet expanding enrolments, and other more developmental expenditures.

Within the education sector, domestic resources and aid funding is likely to be used more efficiently and effectively where a Sector Wide Approach (SWAp) has been taken. Where a sector plan exists and is funded according to an agreed set of priorities, the intra-sectoral allocation of funds between primary, secondary and higher education, should be more efficient, rather than some sub-sectors being overfunded with others severely lacking funds. Pro-poor expenditure predominantly in the primary and lower secondary sub-sectors should be the main priority for countries that are far from reaching the EFA targets. This is emphasised by Naschold (2002) who states that more effective targeting and prioritisation is needed:

*“In recent years, only 2% of aid was allocated to basic education. In contrast, 18% of the proposed doubling of aid is needed to achieve UPE.” (Naschold, 2002, p.1)*

## 2.3 NGO/Community/Private Sector Financing

NGOs, communities, families, and the private sector also have a significant role to play in financing education. Even where education is fee-free, which is the case for primary

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<sup>1</sup> In accordance with the Education for All Fast Track Initiative (EFA-FTI) criteria, a low-income country should allocate at least 20% of its budget to the education sector (World Bank, 2004, p.19).

education across most of Sub-Saharan Africa, families and communities still bear the majority of non-fee payments for education such as uniforms, basic materials like pens and exercise books, travel to school, levies, and the opportunity cost of their children not working.

NGOs play a significant role, in assisting children to attend school through payment of fees and provision of materials for schools and for children. NGOs are also particularly effective at reaching some of the hardest to reach out-of-school children (Foster, 2004, p.36). The private sector plays an important role in providing additional places where the state may not be able to guarantee sufficient places in primary schools to meet demand. Whilst the private sector is normally seen as serving those children from wealthier backgrounds, in some communities, private and semi-private schools (the latter often being run by the church or parents associations) are serving the poor where there would otherwise be no other schools, or where the quality and cost of government schools does not justify the outcomes. Rwanda, Guyana and Ghana are good examples of this.

Where NGOs and the private sector are playing a significant role in financing education sector expenditure, it will be important that there is a coordination mechanism and government liaison to ensure that funding is not being duplicated and is harmonised in the most efficient way. However, as Foster (2004) points out:

*“...although alternative models could be considered, and may have attractions, the decision of whether and on what scale to introduce them must be for Government.”*  
(Foster, 2004, p.38)

## **2.4 Relative Effectiveness of Different Approaches to Funding**

Funding for education, international and national, public and private, is going to be most effective when:

- A Poverty Reduction Strategy Paper (PRSP) is in place that is fully owned by government and has clear priorities outlined both for the importance of education vis-à-vis other sectors of the economy, and within the education sector itself;
- There is a clear country owned and led Education Sector Policy and associated Plan which is supported by all stakeholders, and on which all funding to the sector is based;
- Government financial planning aggregates all resources, both internal and external, and all types of funding types (projects, GBS, SBS, etc.) into one financial framework, and donors are prepared for some of their resources to be used to pay for recurrent expenditures including salaries;
- All financial assistance is harmonised around government systems, is predictable with disbursements being as close as possible to budgets, and is sustainable in the medium to long-term framework;
- Any Technical Assistance (TA) that is provided for by donors is building the capacity of local personnel and local systems rather than “doing the job”;
- Good monitoring and evaluation systems are in place both in terms of performance and in terms of use of financial flows which ensure implementation of the government’s policy and strategy for education, rather than just rhetoric.

Rogerson and de Renzio (2005, p.1) further state that the seven habits of highly effective aid are:

1. Aligning financing on partner country principles
2. Improving aid predictability
3. Relying on country systems
4. Increasing donor complementarity
5. Intensifying and incentivising joint action
6. Ensuring mutual accountability
7. Strengthening systemic capacity

Aid will be least effective when:

- No clear national or sectoral policy and strategy exists;
- Support is ad-hoc reflecting the preferences of the funding partner and being in conflict with sector priorities;
- All resources are focussed on one specific sub-sector rather than a SWAp being adopted. E.g. where primary education becomes the sole focus of all donors, with no plan to address financing the whole sector;
- TA come in and “do the job” rather than training up national staff and building their capacity;
- There are weak or non-existence monitoring and evaluation systems in place for government and donor finances;
- Weak governance and institutions exist and remain (Goldwin, Rogers and Stern, 2002, p.v).

### **3. Linking Inputs to Outcomes for Maximum Efficiency and Effectiveness**

#### **3.1 Introduction**

For many years, donors have focussed on financial inputs to the education system following the old adage ‘more is better’ to justify increased aid flows to education and assuming that these will be linked to better outcomes. However, if an education system or the financial system funding that education system is inefficient, it is not necessarily true that increased financial inputs will lead to much better outputs and outcomes.

*“The weak relationship between spending on both health and education and the outcomes achieved reflects massive differences between countries in the efficiency of expenditure.” (Foster and Keith, 2003, p.16)*

*“The overall evidence supports the common sense view that aid has achieved significant net benefits, but that the benefits achieved in any country depend heavily on the policy and institutional environment.” (Foster and Keith, 2003, p.37)*

This section seeks to define educational efficiency measures, and explore how inputs can be more clearly linked to outputs and outcomes.

### 3.2 General Definition of Efficiency in Education

Efficiency in general terms can be thought of as achieving the maximum or best possible result or output with the minimum possible resources or inputs. As UNESCO points out, there are differing views on how to measure educational output:

*“How educational output is measured depends, of course, on the nature of the objectives of the educational system. Depending on the philosophical, political or analytical viewpoint adopted, the objectives may differ considerably.”*  
([www.uis.unesco.org](http://www.uis.unesco.org))

Despite this, Wolff gives the following definition of internal efficiency in an educational context:

*“...the amount of learning achieved during school attendance, compared to the resources provided.”* (Wolff, 1984, p.29)

This links inputs (resources) to an output (the amount of learning achieved during school attendance). He further states:

*“Data on learning are very difficult to obtain, and a very poor substitute, the percentage of entering students who complete the course, is often used as a measure of efficiency.”* (Wolff, 1984, p.29)

Thus, following this definition of efficiency is equivalent to measuring the number of school leavers produced in a given year from a certain cohort as a percentage of those who started the course (i.e. student completion rate). This takes into account how many students have dropped out or repeated during the course, and indirectly the effectiveness of teaching on students' performance, so it is a proxy measure for the efficiency of the learning process.

**Student Completion =  $\frac{\text{Number of leavers produced in a given year from a given cohort}}{\text{Number of students who started the course in this cohort}}$**   
**Rate**

The closer this rate is to 100%, the more efficient a given higher education system can be said to be. An alternative, but similar measure is the coefficient of efficiency. This is the reciprocal of an input-output ratio, which is defined as ([www.uis.unesco.org](http://www.uis.unesco.org)):

**Coefficient of =  $\frac{\text{Optimal (ideal) number of student-years (i.e. in absence of repetition and dropout)}}{\text{Number of student-years actually spent by a cohort of students}}$**   
**Efficiency**

The nearer this coefficient is to 1, the more efficient a given education system can be said to be. This measure is similar to the student completion rate as it includes the effects of repetition and dropout on the final output.

One of the main advantages of both of these definitions is that they are easy to measure. However, they both have several disadvantages: ([www.uis.unesco.org](http://www.uis.unesco.org)):

1. There is no link between the financial or other inputs into the system and the output, and these inputs may have a positive or a negative effect on the output.

2. Grade repetition is seen as wasteful and automatic promotion as raising efficiency, which does not look at the quality side of education.
3. They assume that students who drop out have learnt nothing, when in reality, if they have followed more than a few days of study, they will have hopefully attained some of the skills and learning that the teacher set out to pass on to them.

### 3.3 Economic Definitions of Efficiency in Education

Salerno (2003) breaks down efficiency in the context of higher education into more precise economic definitions looking at technical efficiency, price efficiency, overall/economic efficiency, and scale efficiency. These definitions can be applied to all levels of the educational system, not just higher education. He then gives an overview of studies undertaken in Western nations using these definitions and measurements of efficiency and he links inputs to outputs more clearly. He defines technical efficiency as:

*“...the extent to which an institute efficiently allocates the physical inputs at its disposal for a given level of output.” (Salerno, 2003, p.10)*

The principle educational inputs can be grouped into three main areas: physical resources (buildings), books and other teaching and learning materials, and staff. Salerno just takes two inputs (staff and computers) and designs a simple economic trade-off model between these two inputs. In reality, there are three principle groupings of educational inputs, and each of these groups contains several combinations of inputs (e.g. staff consist of academic and non-academic staff, and the academic staff have a range of qualifications and experience which make some of them more expensive to employ than others). These groupings can be aggregated financially in terms of expenditures per student or per student-year.

The next definition he gives is one for price or cost efficiency. He states that this:

*“...measures the extent to which inefficiency occurs because an institution is using the “wrong” combination of inputs given what they cost to purchase.” (Salerno, 2003, p.10)*

Moving on to look at scale efficiency, one would expect to see education institutes above a certain size operating at increasing returns to scale.

### 3.4 Qualitative Efficiency Measures

One aspect of efficiency that is not easy to measure is the impact of qualitative inputs on educational outputs. Qualitative inputs both within and outside the education environment, such as official policies and attitudes towards education, utilisation of teaching/learning time, teaching methodology and style, classroom management, student motivation, etc. are also important in assessing efficiency in education.

*“There is no doubt that the use of time in school, classroom management and school heads’ managerial behaviour have a direct impact on school efficiency because they affect how pupils learn and perform in examinations.” (Abagi and Odipo, 1997, p.7)*

They further point out, citing results from a review by Haddad (1978), that:

*“...it was concluded that how a teacher organises and motivates the class is more important than class size...” (Abagi and Odipo, 1997, p.18)*

All these more qualitative factors are very difficult to put a price to, and hence have not been given much attention in the literature and research on educational efficiency. It is also hard to distinguish how much learning outcomes are based on inherent student intelligence and hard work, and how much on the methodology and teaching style of the teacher. This is particularly the case as a child moves through the education system to upper secondary and higher education.

### **3.5 Internal and External Efficiency**

Rather than taking one definition of efficiency and judging the entire functioning of an education system on this basis, it is more useful to look at various aspects of efficiency: examining efficiency in terms of student performance, staffing use and rationalisation, and use of financial resources, as well as using the more general definitions given above, with their inherent limitations. Thus in the following three sub-sections, different internal efficiency measures are defined, and a single measure for external efficiency.

#### ***Internal Efficiency I: Student Efficiency Measures***

The three primary measures of flow efficiency within a student cohort are promotion rates, repetition rates and dropout rates. These measures show how efficiently a given cohort is making the transition through the education system.

**Promotion Rate =** 
$$\frac{\text{Number of newly registered students nationally in a given year}}{\text{Total number of students who were in this class in the previous year}}$$

**Repetition Rate =** 
$$\frac{\text{Number of repeaters observed nationally in a given year}}{\text{Total number of students in that class in the previous year}}$$

**Dropout Rate =** 
$$\frac{\text{Number of dropouts observed nationally in a given year}}{\text{Total number of students in that class in the previous year}}$$

A measure of overall flow efficiency that incorporates the above three measures into one overview point of efficiency of student flow through an education system from start to finish, is the completion rate.

**Completion Rate =** 
$$\frac{\text{Number of completers at the end of a particular course}}{\text{Total number of students that started this course}}$$

#### ***Internal Efficiency II: Staff Efficiency Measures***

Student-staff ratios give an indication of how well one type of input (staff) is used in the education process.

$$\text{Student-Staff Ratio} = \frac{\text{Number of full-time equivalent students}}{\text{Number of full-time equivalent staff}}$$

To obtain a true picture of staffing allocation, student-staff ratios should be measured separately for academic and non-academic staff. It is important to adjust student and staff numbers to full-time equivalent (FTE) so that international comparisons can be made and countries with a large number of part-time students do not appear to have higher student-staff ratios and thus appear to be more efficient than they are in reality, and those with a large number of part-time staff do not appear to have lower student-staff ratios and thus appear to be less efficient than they are in reality.

Another important measure of efficiency is how staff are using their time, measured as teaching-contact hours.

$$\text{Teaching-Contact Hours} = \text{Average number of hours a teacher teaches students in a week}$$

### *Internal Efficiency III: Cost Efficiency Measures*

Just as staff are one important and easy to measure input, financial resources are another key input, some of which are used to pay staff. A useful overall cost efficiency measure is the unit cost:

$$\text{Unit Cost} = \frac{\text{Financial resources for level Y of education system X}}{\text{Number of FTE students in level Y of education system X}}$$

The unit cost can then be broken into a staff and non-staff unit cost.

$$\text{Staff unit cost} = \frac{\text{Financial resources spent on wages for level Y of education system X}}{\text{Number of FTE students in level Y of education system X}}$$

$$\text{Non-staff unit cost} = \frac{\text{Financial resources spent on non-wages for level Y of education system X}}{\text{Number of FTE students in level Y of education system X}}$$

### *External Efficiency*

The main measure of external efficiency is the employment status or transition rate to the next level of education of completing students a short interval after they have finished their studies.

$$\text{External Efficiency 1} = \text{Employment type and status of completers at time T after their graduation}$$

$$\text{External Efficiency 2} = \text{Transition rate between level A and level B of education system X}$$

It is important to know whether or not completers are either employed or pursuing further studies at a given time T after their graduation. In the West, graduates are asked about their employment type and status six months after they graduate in what is known as a First Destination Survey (FDS). In Africa, this period might need to be a little longer, say a year, as the labour market is slower to absorb graduates than in the West (Al-Samarrai and Bennell, 2003, p.8). It is also important to see how well matched graduates are to the jobs they are performing. If university graduates all end up doing non-graduate jobs, this shows an

inefficient use of the education and training they have received. Likewise, if primary school completers end up being employed in similar jobs to those with no education, this also shows that their education has been neither efficient or effective.

### **3.6 Outputs Versus Outcomes**

The link between inputs and outputs may be a good way of seeing whether or not an education system is efficient, but it says nothing about whether the system is effective. Thousands of students may be completing a given level of education in a given year and passing national examinations, but the reality may be that they are barely functionally literate, or not at a standard where they can enter the labour market and find appropriate jobs. So an education system may be extremely efficient but largely ineffective.

An important starting point in looking at outcomes is how they are linked to inputs and outputs and how strong this linkage is.

*“Public expenditure is not a good explanation of health and education outcomes, and there is undoubted scope for making better use of existing resources.” (Foster and Keith, 2003, p.48-9)*

Linking inputs to outputs and outcomes requires a good understanding of the processes that those inputs finance to produce the outputs and outcomes. Building more schools because thousands of children remain out of school, may not be an effective use of resources if the main reason those children are out of school is because the indirect costs of those children attending school (levies, uniforms, etc.) are too high for many rural families. Employing more teachers to enable slightly smaller class sizes may not change the literacy outcomes as much as training teachers more effectively or ensuring textbooks are available in all schools. Hence, it is important that each country can determine clearly the most effective processes to transform financial inputs through effective processes to produce optimal outputs and outcomes in education. If the education sector is not able to do this, then it may well be the case that greater financial inputs of whatever type (budget support or traditional projects) do not lead to better outcomes as these financial inputs are not being used to fund the right type and mix of inputs through effective educational processes.

Related to this is the need for a country to have a clear Education Sector Policy and related Strategic Plan showing how it aims to achieve the MDGs in education. To ensure that this policy and plan are being implemented, a unified Education Management Information System (EMIS) is needed to collect relevant and reliable data to inform policymakers on progress in the education system, and enable them to detect where problems may lie. This will enable the measuring of outputs and outcomes of the education system. Coupled with this is the need for good public expenditure management. An important aspect of this is the need for effective performance and financial monitoring systems to ensure that budgeted funds are actually spent, and that they are spent on the priority areas outlined in the Education Strategic Plan rather than vired to other less important areas. Where budgeted funds are not spent, then an expenditure monitoring system will also seek to find where the bottlenecks are in the system. Hence the urgency for:

*“Establishing a monitoring and evaluation structure that relates indicators to verifiable targets of the education strategy, and enables the full chain of logic to be*

*monitored, from resources to activities to outputs to outcomes, with explicit assumptions about the underlying linkages.” (Foster, 2004, p.45)*

Thus, to conclude, to ensure inputs are clearly linked to outputs and outcomes, internal and external efficiency in an education system are crucial, alongside effective means of gathering information and measuring the performance of the education system. In addition to this, clear understanding of the links between inputs and outcomes is needed to ensure that education financing is funding efficient and effective processes of learning and enabling students to reach minimum standards at the end of their programme of study in an education system that is relevant and ensures quality. This is critical in all types of educational provision – formal and non-formal, public and private – and at all levels of the education system.

#### **4. Coordination of All Types of Financing**

There are two main reasons why both aid and national resources are not as effective as they could be: firstly, due to a lack of coordination of international financing, and secondly, due to a lack of coordination amongst all stakeholders, both national and international, involved in financing in a given country.

There are currently several regional and sub-regional development banks duplicating the work of the World Bank Group, but limited to a certain geographical sphere. The funding of these banks is by the same group of DAC member countries who fund the World Bank and provide bilateral funding, and this funding enables these banks to have a high credit rating in the international capital markets (Odedokun, 2004, p.26). In addition to these development banks, there are also many United Nations (UN) development groups (UNICEF, UNDP, and UNESCO, just to name a few) who are also providing aid to different countries.

Clearly, providing funding through multilateral organisations is likely to be more efficient due to economies of scale, and less open to a particular bilateral donor’s bias due to colonial history or the desire for political influence. As Odedokun (2004) points out:

*“Official bilateral aid allocation is still characterized, if not by actual chaos then, at least by a lack of coordination...Different donors put different emphasis on aid objectives. The end result is that the aid received by beneficiaries is lopsided; many receive much more than their fair share while others receive much less.” (Odedokun, 2004, p.19)*

Empirical evidence certainly supports the theory that multilateral assistance is more targeted than bilateral assistance (Dollar and Levin, 2004, p.13). However, when there are two main competing multilateral organisations, the World Bank and the UN, who are providing development assistance, as well as the IMF who is providing economic and financial assistance, it is difficult to see how even if all assistance was channelled through these three institutions with their various sub-regional or sectoral parts, development assistance would be fully optimal. It might be slightly more efficient than current bilateral aid allocations, but there are still likely to be various inefficiencies and duplications in the system.

In addition to the provision of international resources, there are frequently many national financial partners financing different parts of the education system in African countries –

government, NGOs, the private sector, and community and faith-based groups. They are often using limited resources in a way that duplicates activities due to their lack of coordination and cooperation, leading to a sub-optimal use of resources.

Thus, all stakeholders need to work together rather than in isolation, coordinating all financial inputs into one common Education Strategic Plan, and ensuring financial inputs are targeted towards the key priorities outlined in the plan. The private sector along with religious and community providers of education should also be included in education policy and financing dialogue, given that they are often providing a significant portion of education services. It may also be important for the Ministry of Education to set up a public-private partnership office within its own structures, to ensure effective partnership in the provision of education through the private and community sector. Where all stakeholders are involved, it means that resources are more likely to be coordinated through a SWAp, targeted towards the poor and needy, and there is a greater probability of national ownership of policies and reforms, with an emphasis on building local capacity rather than creating parallel systems.

## **5. Proposed New Forms of International Financing**

Clearly, significant cost savings may be able to be made through better use of existing resources (both national and international), improved educational processes that transform these financial inputs into effective outputs and outcomes, and through more predictable aid delivery. However, these cost savings are unlikely to amount to the minimum \$9 billion annual deficit needed to fund the education MDGs, let alone the other MDGs which may have a positive effect on educational outcomes.

On 8<sup>th</sup> July, the G8 leaders announced new commitments on aid, debt relief, climate change, trade and peace. In relation to aid, an agreement was made to increase aid to all developing countries by around \$50 billion per year by 2010, with \$25 billion of this going annually to Africa. This equates to a doubling of aid to Africa by 2010. The debt relief announcements will free up more than \$11 billion from 2005-2015 for investments in social services needed to meet the MDGs ([www.number-10.gov.uk/output/Page7880.asp](http://www.number-10.gov.uk/output/Page7880.asp))

Whilst these new commitments are important, they will not succeed in closing the financing gap required to achieve the MDGs. Atkinson (2004) outlines seven new sources of international financing as additional possibilities to meet the \$50 billion annual deficit in financing for the MDGs (Atkinson, 2004, p.1) which are shown in table 2 on the following page. It is important to point out that agreement was made during the July 2005 G8 summit that a group of G8 and other countries will take forward the International Finance Facility (IFF) for immunisation and an air-ticket solidarity levy. However, at least at the beginning, this is likely to be much smaller than what is proposed by Atkinson.

He further points out that in each of these options, given that there is a risk of the market being flooded with what might seem to be extra funding, individual countries might have the temptation to decrease their ODA in order to fund these new initiatives. Hence, it will be important to ensure that any new sources of finances are additional, rather than a redistribution away from existing aid (Atkinson, 2004, p.2). Foster and Keith (2003, p.6) warn of the possible dangers of flooding developing countries with too much aid, thereby undermining their capacity to manage it, appreciating the real exchange rate thus reducing the

international competitiveness of the recipient country, hence increasing the difficulty of macroeconomic management. The well performing developing countries are already currently receiving as much aid as they can absorb. The poor performing countries now need more aid coupled with developing good governance and more stable and just societies (Naschold 2002, p.2).

**Table 2: New Sources of Financing for International Aid (based heavily on Atkinson 2004)**

<b>Source</b>	<b>Explanation</b>	<b>Income Generated</b>
1. Global environmental taxes (carbon-use tax)	Tax on goods that have damaging environmental effects, specifically in this case, a tax on the use of hydrocarbon fuels according to their carbon content.	Setting an energy tax at one-tenth or one-twentieth of those normally considered in global warming literature, would generate an additional \$50 billion per year.
2. Tax on currency flows (Tobin tax)	Tax on foreign currency transactions which can be collected nationally or on a market basis.	At 2 basis points, rather than the proposed international 10 or 20 basis points, this could generate an additional \$25 billion per year.
3. Creation of new Special Drawing Rights (SDRs)	SDRs made available by donor countries to fund development.	An additional \$25-30 billion per year.
4. International Finance Facility	Long-term conditional funding guaranteed to the poorest countries. Long-term pledges will enable access to additional money from the international capital markets.	Potential to generate additional \$50 billion per year.
5. Increased private donations for development	Charitable donations by private individuals and firms.	
6. Global lottery and global premium bond	Global lottery or premium bond parallel to or in conjunction with national systems, with proceeds shared between participants and an independent foundation established in conjunction with the UN.	
7. Increased remittances from emigrants	Citizenship rather than residence based for taxation.	

Clearly all these possible new sources of financing are on a much more global scale than mere bilateral funding. They may require strict global legislation in the case of the carbon-use tax or the Tobin tax, to ensure that countries will actually pay them. It will also be important to ensure that individual countries honour their pledges and become more reliable about disbursing their commitments.

## **6. Conclusion**

This paper has explored the existing funding channels and mechanisms for financing the MDGs, more specifically the two education MDGs. It has concluded that there is currently no ideal one-size-fits-all model that will produce the most efficient and effective form of financing in each developing country. Rather, depending on the national and sectoral policy environment, strength of capacity and dependency on aid, different systems and modalities will be appropriate in different countries.

However, what is important is that each developing country moves towards integrating all forms of financial assistance into one common framework that is linked to an Education

Sector Policy and corresponding Strategic Plan. This plan should clearly state the assumptions being made about which processes within the education sector are the most effective for transforming financial inputs into educational outcomes. This would mean that whether there is increased efficiency in the use of national resources, or increased aid flows through existing mechanisms or through new aid modalities, developing countries will be better prepared to use these finances both more efficiently and more effectively. This is particularly important given that the additional financing needed for low-income countries, whether through new forms of aid or through increased efficiency in existing financial flows, would imply tripling their current aid receipts given that they presently receive less than 50% of global aid (Foster and Keith, 2003, p.6).

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