



**Consortium for Research on
Educational Access,
Transitions and Equity**

**Long Term Planning for EFA and the MDGs:
Modes and Mechanisms**

Keith M. Lewin

**CREATE PATHWAYS TO ACCESS
Research Monograph No 7**

June 2007



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Consortium for Research on
Educational Access, Transitions & Equity

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The Consortium for Educational Access, Transitions and Equity (CREATE) is a Research Programme Consortium supported by the UK Department for International Development (DFID). Its purpose is to undertake research designed to improve access to basic education in developing countries. It seeks to achieve this through generating new knowledge and encouraging its application through effective communication and dissemination to national and international development agencies, national governments, education and development professionals, non-government organisations and other interested stakeholders.

Access to basic education lies at the heart of development. Lack of educational access, and securely acquired knowledge and skill, is both a part of the definition of poverty, and a means for its diminution. Sustained access to meaningful learning that has value is critical to long term improvements in productivity, the reduction of inter-generational cycles of poverty, demographic transition, preventive health care, the empowerment of women, and reductions in inequality.

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List of Acronyms

DFID	Department for International Development
EFA	Education For All
EMIS	Education Management Information System
FCUBE	Free Compulsory Universal Basic Education
GDP	Gross Domestic Product
GER	Gross Enrolment Rate
GER1	Gross Enrolment Rate (Primary)
HMT	Her Majesty's Treasury
MDGs	Millennium Development Goals
MTEF	Medium Term Expenditure Frameworks
NER	Net Enrolment Rate
NGOs	Non Governmental Organisations
PRSPs	Poverty Reduction Strategy Papers
SSA	Sub-Saharan Africa
TVET	Technical and Vocational Education and Training
UPE	Universal Primary Education
ZIP	Zone of Improbable Progress

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Preface

This research paper is one of a cluster of CREATE papers which address planning, finance and resource mobilisation questions. It specifically addresses questions that arise from the newly prioritised concerns to manage the growth of access at secondary level within sustainable resource envelopes. This is becoming a key policy issue through Sub-Saharan Africa and is the subject of several regional conferences and sector planning workshops. The work is closely linked to the World Bank Secondary Education in Africa programme and the Association for Educational Development in Africa (ADEA) thematic group on secondary education.

Professor Keith Lewin
Director of CREATE

Summary

This discussion paper provides an overview and analytic guide to long term planning of education systems in the context of Education for All and the Millennium Development Goals. Long term gains in educational access depend on anticipating future financial and non-financial constraints on growth and on successful implementation of plans which support growth that can be sustained. Some recent expansion of primary schooling has failed to take a sufficiently long term approach to growth and has risked the creation of resource bottlenecks, poor trade offs between quality and quantity, and dependence on uncertain financing.

The paper first outlines three different styles of long term planning – Planning Lite, Framework National Planning, and Participatory Planning. It distinguishes between aspirational and target-generating approaches. It then describes the processes and tools that are needed to develop long term plans for expanded access that can reconcile goals and targets with realistic resource envelopes. These processes are designed to include mechanisms to promote consensus and build commitment. The nature of Medium Term Expenditure Frameworks (MTEF) is then explored as a necessary tool to manage implementation. Appendix 1 provides more detailed discussion of the three approaches to planning. Appendix 2 elaborates on aspirational planning and gradients of achievement. Appendix 3 explores issues concerned with targets and indicators of performance. Appendix 4 contains a selected list of source materials.

Long Term Planning for EFA and the MDGs: Modes and Mechanisms

1. Introduction

Achieving the Education For All (EFA) and the Millennium Development Goals (MDGs) requires approaches that are comprehensive across the education sector, recognise interactions with other sectors (especially health), and are financially sustainable. To reach the “last 20%” and other vulnerable children, and ensure that their enrolment and learning is secure requires action across the board to improve infrastructure, address health issues, provide enough teachers where they are needed, increase curriculum relevance and effectiveness, and improve the demand as well as supply of educational services. Special measures are likely to be necessary for children from the poorest households, and for girls where their enrolments are low. It will not be sufficient simply to build more schools, train more teachers and abolish fees, without placing such activities within a predictable long term framework that identifies cumulative liabilities and mobilises the resources needed.

Governments cannot finance and implement a successful education development strategy to achieve the relevant MDGs by depending on front loaded investment to ratchet up primary school entry rates to high levels. This will not be sufficient to result in full enrolment over the primary cycle. Often this has not happened. Enrolment patterns in several countries with EFA programmes indicate that early success in expanding access may be followed by slow growth in higher grades with disappointing improvements in drop out and completion rates, and falling transition rates into lower secondary. In too many cases rapid expansion has led to reductions in quality, and in the softening of demand for places. Expenditure per student has remained static or fallen with expansion in unplanned ways, and teacher deployment has not kept pace with needs.

What is required is consistent investment over the medium term to support the ongoing costs of teacher salaries and teacher training, quality improvement including greatly increased supplies of learning materials, the revitalisation of school management, monitoring and supervision systems, and construction. This needs to be planned at sector level, not just for primary schooling since in reality there are many interactions and trade-offs in public sector investment across education budgets. Future recurrent and development costs need to be met and managed not just over one or two years, but over the full ten year period to 2015 and beyond.

At present over 60 countries are considered at risk or unlikely to achieve the goal of universalising primary education by 2015. A further 80 are unlikely to achieve gender parity at primary and secondary level by 2015. The majority are in Sub-Saharan Africa (SSA). Many of these countries will fail to achieve the MDGs and EFA without substantial external assistance which can finance growth faster than can be supported from domestic revenue alone. Historically, aid to many poor countries has been contracted over short periods (often no more than three years) and has flowed with varying degrees of reliability and progressive disbursement. Where external assistance is a large part of the resources available for educational expansion this has made it very difficult to implement comprehensive growth strategies. Greater certainty is needed about future flows of external resources which can underwrite systematic and cumulative development of infrastructure and capacity.

The propositions in this monograph are designed to extend but not replace existing plans where these can be scaled up, extended in range, and coupled to realistic assessments of what needs to be done to approach the 2015 goals. The plans have to cover not just two or three years but the full period up to 2015. If this is not undertaken then many surprises will await policy makers and planners who fail to anticipate the forward consequences of over ambitious plans. In the short term high rates of enrolment expansion can often be accommodated in existing facilities through double shifting and increased class sizes. Sooner or later they lead to very large class sizes and lowered learning effectiveness if growth is not managed in an integrated way. Different inputs have different lead times, for example, the procurement, construction, and equipment of new facilities; the training, appointment and deployment of new teachers; and the development and production of learning materials in large quantities. Both classroom construction and teacher supply are derivatives of the growth in enrolments and as often require much higher rates of growth than the underlying rate of growth of pupil numbers. Growing demand for secondary places as a result of successful primary completion can quickly generate unsustainable cost burdens at current levels of cost per pupil in much of Sub-Saharan Africa.

To make EFA and the MDGs happen the UK Government (HMT and DFID) has recommended that comprehensive and credible plans need to be in place for countries to meet the education MDGs and EFA goals and consolidate these up to and beyond 2015. The aim should be that all countries at risk of not achieving the goals develop rolling ten-year framework plans that identify critical forward needs and their resource implications. No prudent government will adopt EFA policy interventions (e.g. abolishing user fees, pro-poor bursaries, cash transfers, universalising entry to lower secondary schooling) without some assurance that they will be able to pay the recurrent costs of maintaining and servicing expanded basic education systems and that development expenditure will be sufficient to support planned growth without massively degraded quality¹.

This paper contains advice, guidance, material for developing planning methods, and practical tools for education planners and policymakers and their partners. These are designed to support the development of long term visions and strategies for educational development which anticipate forward commitments and their financial consequences. The ideas and processes can be used to mobilise support and cooperation from stakeholders, negotiate consensus of the pathways which are possible, reject those which are improbable, and link visions with implementation strategies that can be financed.

This briefing paper identifies key policy and strategic issues in developing long term plans for expanded access to primary and secondary schooling. Its special concern is how best to plan the scaling up needed whilst recognising the financial and non-financial issues that will determine the highest rates at which progress is possible. Long term planning has to be whole sector in scope. Planning primary expansion without due attention to flows and costs at higher grade levels invites bottlenecks (e.g. of teacher supply), unplanned changes in transition rates (such that motivation to complete a cycle may be undermined), and perverse impacts on equity (access to post primary opportunities may become more rather than less biased by

¹ Basic education increasingly includes lower secondary schooling in the definitions adopted by many developing countries.

household income and gender). The invitation is to undertake whole sector² planning which recognises the interactions and cost drivers at different levels, attempts to optimise investment in different sub-sectors, and seeks to generate sustainable forward plans that meet future needs that recognise both universal rights to education and the importance of balanced investment strategies that support economic growth and reduce poverty.

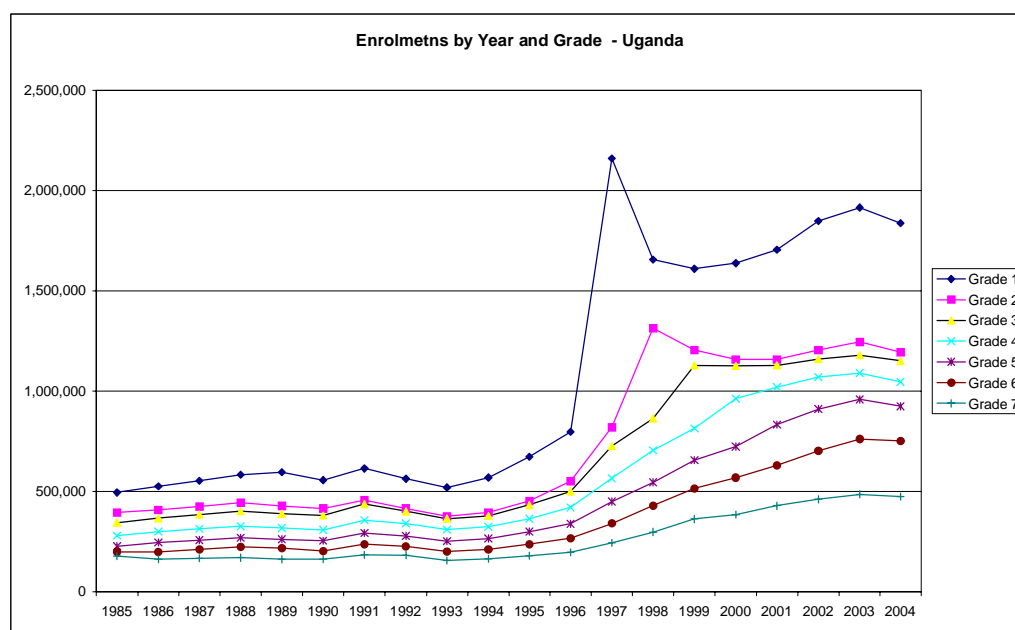
The paper first outlines three different styles of long term planning – Planning Lite, Framework National Planning, and Participatory Planning. It distinguishes between aspirational and target-generating approaches. It then describes the processes and tools that are needed to develop long term plans for expanded access that can reconcile goals and targets with realistic resource envelopes. These processes are designed to include mechanisms to promote consensus and build commitment. The nature of Medium Term Expenditure Frameworks (MTEF) is then explored as a necessary tool to manage implementation. Appendix 1 provides more detailed discussion of the three approaches to planning. Appendix 2 elaborates on aspirational planning and gradients of achievement. Appendix 3 explores issues concerned with targets and indicators of performance. Appendix 4 contains a selected list of source materials.

² Post school and higher education plans should also figure in long term planning though they may be treated in somewhat different ways to planning mass school systems driven centrally by demographic concerns and desired levels of participation.

2. Why Long Term Planning is Needed

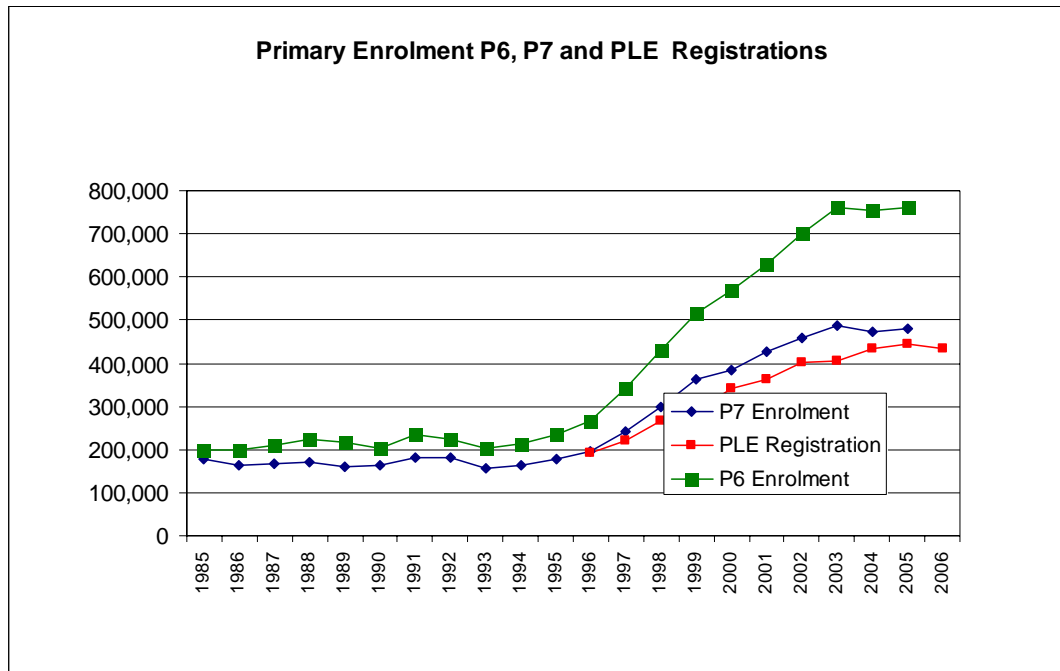
Analysis of longer term enrolment trends over the last two decades is illustrative of why long term planning is needed. Two cases indicate the problems it can address. First, in Uganda Universal Primary Education (UPE) was announced in 1997. An immediate consequence was a dramatic increase in enrolments in grade 1 (Figure 1). The following year these fell back by about 25% presumably because many eligible children had enrolled over-age and they were fewer to enrol in 1998 in grade 1. Subsequently, grade 1 enrolments gradually increased again but by 2004 were actually falling. This pattern can be traced in grades 2 and 3 in subsequent years, though on a reduced scale. The enrolment curves for grades 4 to 7 show increases but not the peaks of UPE. It is very noticeable that the differences between grades remain fairly constant suggesting that although total enrolments increased effective rates of drop out and non-completion remained high. The effect of UPE was therefore much less in higher grades several years after UPE, than it was in grade 1.

Figure 1 Enrolment by year and grade - Uganda



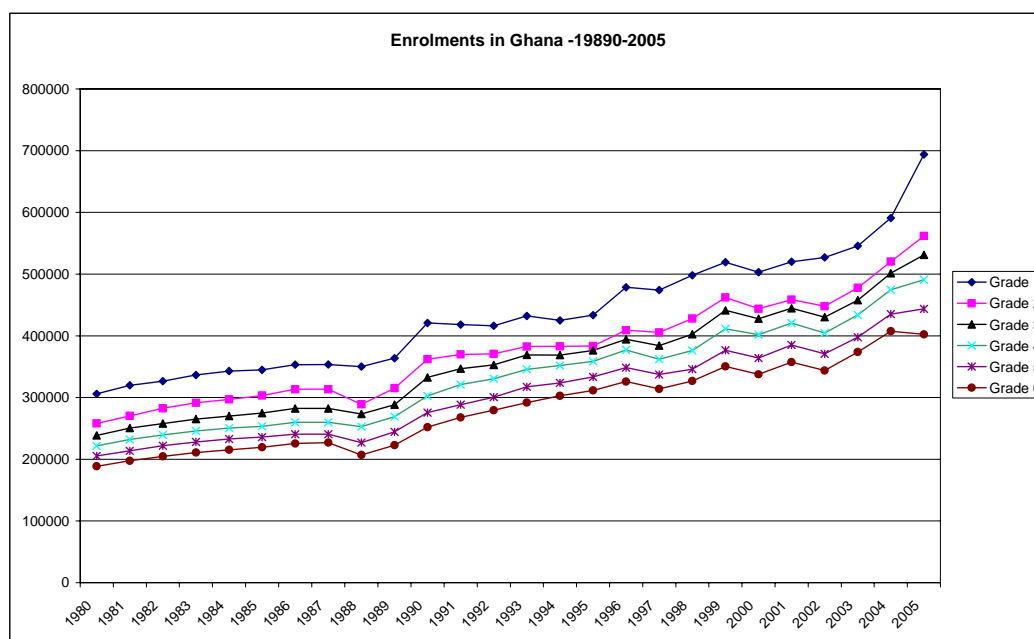
Not only that, the difference in enrolment between primary grade 6 and primary grade 7 began to increase dramatically after UPE (Figure 2). By 2005 there were 250,000 more children in primary 7 than in primary 6. This is most likely to be a result of queuing in primary 6 for the opportunity to enter primary 7 and take the primary school leaving examination. Whatever the causes it represents a new kind of inefficiency that will delay the achievement of 100% completion rates. Those held in primary six for more than a year will increase their probability of never completing.

Figure 2 Enrolment in primary 6 and 7 and entry to PLE - Uganda



Patterns in Ghana are very different (Figure 3). Here Free Compulsory Universal Basic Education (FCUBE) dates from the late 1980s. Though there was an increase in enrolments in grade 1 it was not nearly as large as that in Uganda. Strikingly the grade by grade enrolment pattern has persisted to the present with a gentle upward slope not much more than population growth. The differences in enrolments between grades has remained fairly constant with none of the convergence that might be expected.

Figure 3 Enrolment by year and grade - Ghana



Thus in both Uganda and Ghana UPE has not unfolded in the way it might have been expected to evolve. Part of the reason for this is almost certainly that growth after the announcement of UPE was not planned effectively. Too much emphasis was given to headline enrolment rates, and very little to distribution between grades or completion. If grade enrolment had been tracked more systematically then the most obvious problems, especially early grade drop out, uneven growth in enrolment by grade, and patterns of gendered exclusion, could have been identified and acted on. School practices resulting in inefficient queuing in Uganda would have been identified, and the resilience of historic enrolment patterns in Ghana would have been noted. The implications of these and other events for training and deployment of teachers, for class sizes, learning materials supply, and for classroom building could have been more effectively included in implementation plans. And the cost implications could have been more clearly foreseen.

Long term planning has its detractors. Almost by definition any long term plan evaluated retrospectively will turn out to be at variance with outcomes. Projections in the Gold Coast (Ghana) in 1934 indicated that primary schools might enrol all children by the year 2534 at the then rate of expansion! Things can happen both faster and slower than anticipated. The planner's paradox remains relevant.

“Innovation is needed in education systems that fail to deliver equitably and acceptable quality of service; innovation is disruptive, resource consuming, and unevenly implemented; as a result, in the short term it is likely to adversely affect the equitable delivery of a service at an acceptable level of quality”³

Planned change may make some things worse before they get better (high class sizes, shortages of learning materials, increased numbers of untrained teachers). However this is no case for backing away from managing planned change. Planning does in some people's mind substitute error for risk. Planning can indeed be wrong (poor technical analysis, unrealistic assumptions, rigid adherence to out of date strategies). And in a sense that is its purpose, to create forward plans related to goals against which real events can be judged and plans adjusted. Without effective planning there are the much greater problems of the risks associated with judgements and decisions over influenced by short term political events, populist slogans, causal empiricism, and idiosyncratic preferences. As a Nigerian colleague puts it “to fail to plan is to plan to fail” and “kicking with both legs at one and the same time does not pay”.

³Lewin K M, with Stuart J S (eds) *Educational Innovation in Developing Countries; Case Studies of Change Makers*. MacMillan. 325pp. ISBN (limp-back) ISBN 0-333-49094-0 (Hard-back) (2nd edition, first edition 1991)

3. Developing Long Term Plans

3.1 Some General Principles of Educational Planning

Educational Plans can be developed in at least three ways, requiring different processes and time scales. These three approaches are described in detail in Appendix 1. In brief, *Planning Lite* uses a macro approach with little detail to establish order of magnitude estimates of the financial demands created by commitment to enrolment targets (for example, universal primary and lower secondary schooling). *Framework National Plans* use EMIS and census data to project systematically at national or regional level and can be built to reflect budget lines in an MTEF. *Participatory planning* generates plans shaped by inputs from the local level e.g. schools or districts⁴, which are aggregated and harmonised at higher levels. If rough estimates are needed quickly *planning lite* may be helpful. Planning lite cannot provide detailed estimates which respond to a range of policy options. *Framework National Plans* are flexible tools which disaggregate flows of pupils, demand for teachers, types of school etc. and use these to drive costs through unit cost estimates of different kinds. These can be used to develop scenarios that identify and respond to different policy options. To be robust they require adequate baseline data and technical competence to construct.

In systems where planning responsibilities are devolved to provincial and district levels (e.g. for teacher deployment, school admissions), the generation of National Plans involves the collation and integration of lower level plans with National-level responsibilities and competencies (e.g. for curriculum development, teacher education)⁵. Decentralised planning may be viewed as a limited form of participatory planning if it draws from the local level; alternatively it may simply replicate national planning processes with most inputs coming from above rather than below.

Participatory planning is generally too cumbersome and complex to be useful for long term planning precisely because it involves many actors with different agendas and priorities and different grasp of system level opportunities and constraints. It requires co-operation and conflict management when trade-offs have to be addressed. To be effective it needs systematic management and skilled animateurs. It also takes a lot of time and capacity to develop effective implementation strategies above the level of the smallest component parts.

All three of the methods can be approached from two different perspectives. First they can be developed with time bound targets for key indicators and their values at future dates (e.g. Gross and Net Enrolment rates, completion rates, transition rates, gender parity indicators in 2010, or 2015). This is *aspirational planning*. It may result in unrealistic pathways between current status and desired outcomes. If the targets are not coherently inter-related it may also generate contradictory pressures on investment priorities. Thus drawing a line back from a desired outcome in 2015 (e.g. all children of school age complete primary) typically generates a linear path indicating that certain numbers of schools, teachers and textbooks need to be provided. In reality slippage is inevitable in the first phase of rapid expansion whilst systems

⁴ The local level may not be as low as the institution, not least because long term planning at institutional level is not usually very useful. However, the further the plan development from the service deliverers, the less participatory it really is.

⁵ The DFID-funded Primary Education Planning Project in Sri Lanka (SLPEPP) provides a good example of an integrated approach to provincial and national-level planning. See www.ioe.ac.uk/leid/slpepp for a manual of planning guidelines, examples of plans and reflections on the policy-planning process in the context of EFA.

are developed to procure build and deploy assets which have lead times on provision. The gradient of the pathway to successful achievement then steepens for later years sometimes to the extent that it becomes implausible given the record of achievement. This has happened (e.g with gender parity). If targets are generated in isolation then contradiction is likely. Thus enrolment expansion at a given pupil-teacher ratio requires teachers to be trained and deployed in advance of enrolment growth. This often does not happen and a long process of catch-up is invoked. If transition rate targets are set for primary to lower secondary without plausible projections of primary completion rates they will be unattainable either because there are not sufficient primary qualifiers for lower secondary or because the growth in primary output greatly exceeds the capacity to the lower secondary system to absorb all those who complete. Thus setting targets independent of structural and financial realities can create implementation challenges of unsustainable magnitudes.

The alternative planning method is to start with estimates of the highest sustainable rate of expansion that does not degrade quality to unacceptable levels. This takes time to establish and depends on forward projections which draw attention to critical limitations of capacity, infrastructure and finance. This *target generating planning* has a greater probability of identifying achievable targets to be set. It takes known financial constraints (e.g. projected growth in GDP, domestic revenue collection and government budget allocated to education) and non-financial constraints (e.g. capacity to procure and build classrooms, capacity to train new teachers) on expansion into account from the outset. It avoids the trap of agreeing targets that many stakeholders pay lip service to knowing full well that they will not be achieved. It can strengthen the link between target setters and target getters. It also allows targets to be set for incremental improvement at manageable rates.

On the down side target generating planning sits uneasily with EFA and MDG goals which are prescribed independently of the chances of realising them and which appear to represent inflexible end points independent of progress. Target generating planning offers the prospect of managed growth at rates which do not degrade systems to the point where the targets set actually create problems which accumulate in magnitude whenever developments in the real world go off track (the rising gradient of the pathway to success – see Appendix 2 for an illustration). It may be the best way to support planned growth which is sustainable.

Long Term Planning is best conducted using Framework National Plans. This does not mean that these methods exclude participation but they have to be seen as something different from planning which is driven upwards from local stakeholders. Practically it has to be driven centrally with windows in the process for stakeholder consultation which is then reflected in the development of plans. Policy makers in education are responsible for developing a vision and strategy for educational development and mobilizing support and cooperation for implementation across a wide range of stakeholders. The tools and approaches described in this paper should help policy makers and their officials design viable plans which gain consensus. Given the range of stakeholders and their differing concerns, conflict of interests among them will be inevitable. This means that high quality technical analysis and consultation has to be accompanied by negotiation and reconciliation of competing priorities and the demands of key stakeholders. Transparent processes and clear decision-making are essential to generate consensus and commitment.

Long term planning provides an umbrella framework defined by anticipated resource envelopes, and goals and objectives that are feasible. Shorter term plans can be developed within this umbrella with the confidence that their implications and forward financing are

sustainable. To be useful long terms plans need to embrace all educational levels and include primary, secondary and post secondary services. They also need top be reviewed and updated iterated on at least and annual basis to adjust for changing circumstances, rates of progress, and evaluations of impact.

3.2 Starting to Devise a Ten Year Plan

Several questions need to be answered before developing a medium to long term educational plan. These are:

- What is the current status of the education system in terms of key indicators of access, quality and outcomes, disposition of assets, and patterns of funding?
- What are the goals for the plan period?
- What are the objectives for the plan period?
- How will the plan relate to the existing status of the education system, and existing plans and commitments, including those which are cross sectoral e.g. poverty reduction strategies?
- What are seen as the critical problems that face sector development and how are they prioritised?
- What additional information is needed to develop a plan?
- Who are the audience(s) for the plan?
- Who needs to be involved in developing the plan and at which stages?
- What should the plan contain?
- How will the plan be prepared and by whom?
- How will the plan be transformed into an implementation strategy for service delivery?

Goals which can be related to objectives are at the heart of any planning process. Goals need to provide a vision of the valued outcomes which can be used to garner consensus and commitment. Goal statements need to be resilient to short term political changes and flexible enough to accommodate developments as they occur over the medium term.

Objectives are more specific and their achievement is necessary to attain the goals. To be useful they need to be specific (i.e. not ambiguous and clearly specified), measurable (either directly or by a proxy), achievable (since unattainable goals have little credibility), relevant (i.e. serving a valued purpose), and time bound (objectives without a time frame are not very useful).

No planning takes place in a vacuum. It has to be developed on the basis of an adequate diagnosis of the current status of an education system which provides a starting point. It should review previous attempts to address similar issues to see what lessons can be learned. It should be connected with existing plans so that it can build on them. It has to recognise cross-sectoral plans that will have an impact on the education system and relate to other relevant planning tools e.g. Poverty Reduction Strategy Papers (PRSPs).

The intended audiences for a plan have to be clear. This will determine the process, contents and presentation of the options at the later stages of the planning process. Plans for external audiences of development partners need to respond to their priorities as well as those of national governments. These may not be coincident. Moreover, unless there is a single

Long Term Planning for EFA and MDGs

external audience, it may be necessary to devise more than one way of presenting options arising from the plan.

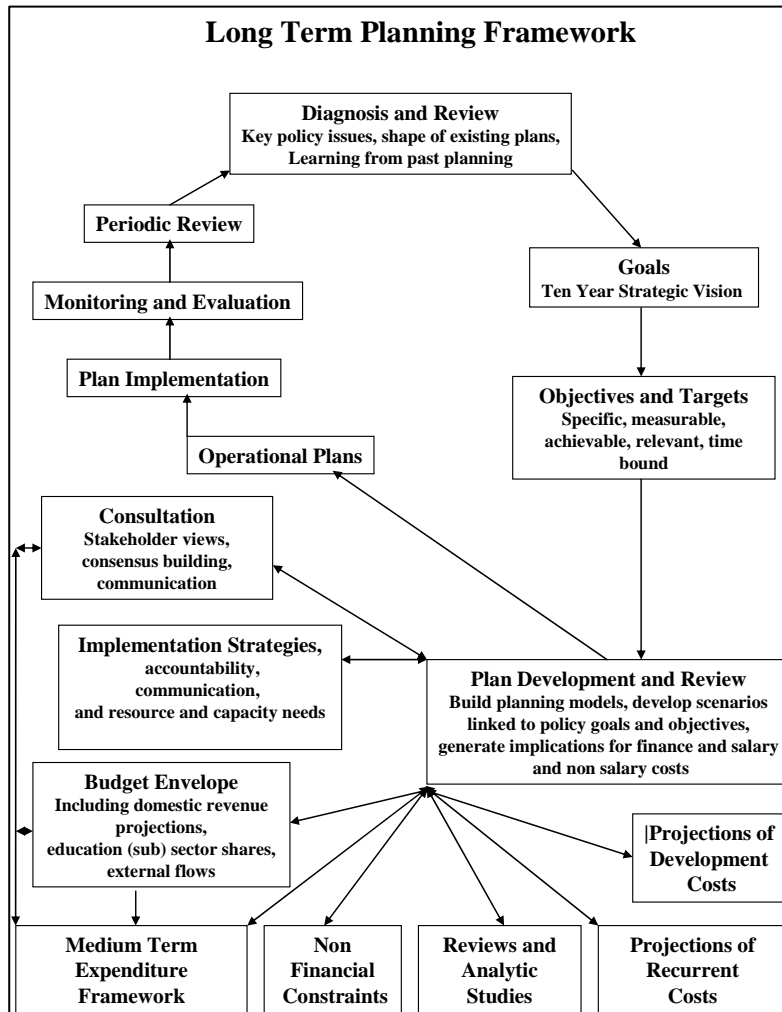
The audiences for a plan partly determine who should be involved in the plan development process since the plan must meet needs identified by its audiences. Those who develop the details of the plan must do so in an informed way which recognises key stakeholders concerns and ambitions.

A planning task group should be established to coordinate plan development, identify options for policy choice, and prepare the ground for stakeholder consultation and consensus building. This may result in regional and national fora to tune options to political realities and practical capabilities.

Lastly, once the long term vision and framework has been agreed the plan needs to be linked to an implementation strategy which is plausible and within the capacity of the service delivery providing systems, and which recognises financial and non-financial resource constraints.

Assuming the intention is develop plans in more depth than *planning lite*, then a process like that discussed above and illustrated below in Figure 4 needs to be enacted.

Figure 4 Long term planning framework

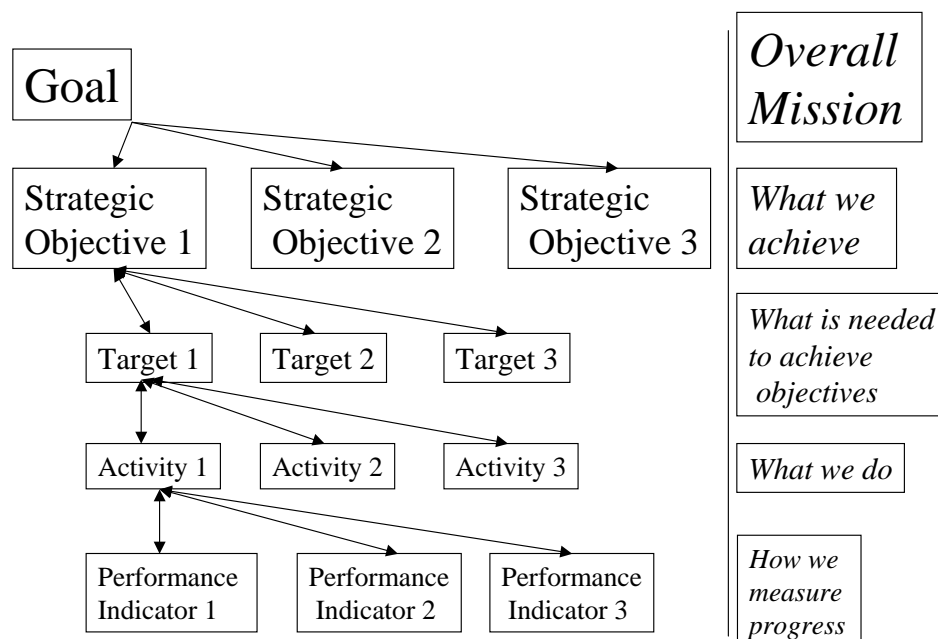


3.3 Developing the Plan

The 10 Year Planning Framework process starts from a review of key policy issues, existing plans, and lessons from previous experience. Goals and objectives need to be agreed at an early stage though they may subsequently be modified as the plan evolves and must be tested against broad feasibility. Target generating techniques should be used for this purpose.

Goals are defined which relate hierarchically to strategic objectives. These can be linked to targets and performance indicators (Figure 5). This process can lead towards Performance Based Budgeting systems within an MTEF. The elaboration of this is outside the scope of this memo.

Figure 5 Goals, strategic objectives, targets and performance indicators



Plan development is at the heart of a web of inputs needed to construct a long term plan (Figure 4). A planning model needs to be generated which captures enrolment flows, demand for teachers, classroom and building needs and all other significant inputs to the education system. This is described in more detail in Appendix 1, Framework National Plans. These inputs are then linked to unit costs to develop forward projections of the expenditure which would be necessary.

Other inputs to the process include a review and analysis of non-financial constraints on growth. These factor-in known capacity constraints on increasing participation, lead times on building, teacher training, curriculum reform and learning materials production, and assess risks. They should also identify “killer assumptions” contained in planning which if not satisfied will undermine the achievement of the goals and objectives.

A key aspect of the first stage of the planning process should be to design studies to fill important knowledge gaps regarding the various components of the sector: in particular, primary and post-primary education and training. Together with existing knowledge and data these studies should provide the main basis for a consultative process that will ultimately lead to an education policy framework and strategy for a ten year period. Analysis should consider the financial, sustainability, and equity implications of the various policy proposals and goals and objectives developed by the government. Existing studies may need consolidating into evidenced based policy papers. New studies may be necessary where data is lacking.

In relation to expanded primary education these studies might include:

- Analysis of present and future growth in the school age cohort and its (changing) geographic disposition
- Entry, progression and completion rates by sex and age
- Indicators of learning achievement
- Deployment and utilisation of teachers and variation in pupil teacher and teacher class ratios
- Direct and indirect costs of attendance and public costs per pupil
- Gender issues
- Attendance
- Out of school children, especially those falling into categories of vulnerability.

In relation to expanded secondary schooling these studies might include:

- Labour market analysis of employment of secondary school leavers
- Selection mechanisms into secondary schooling
- Levels of achievement of secondary pupils and their correlates
- Gender issues in secondary schools
- Direct and indirect costs of attendance in secondary schools and public costs per pupil
- Learning material supply and costs, curriculum evaluation and analysis
- Teacher deployment and workloads, repetition and promotion practices
- Teacher and pupil attendance; and non-government provision.

Concurrent with the completion of such policy focused studies, policy makers and their development partners should identify in broad terms options for increasing meaningful access⁶ to primary and post-primary education drawing on the findings of the various studies. This can generate several pathways with different levels of ambition and challenge. Typically three types of options are useful. These are: first, a status quo scenario based on the evolution of the system with essentially the current disposition of assets and costs i.e. a scenario which projects forward current trends without major reforms. Second, a baseline reform scenario which takes its cue from stated goals and priorities and seeks to place these within a framework of planned expansion that fits a resource envelop linked to anticipated GDP growth. This may require cost saving reforms and efficiency gains to support the costs of expansion. Third, more radical options can be considered. These usually assume high levels of systemic reform, faster progress on expanded service provision, and enhanced funding above GDP growth with the implication this can be met from increased external assistance. In each case if a target generating approach is used then the scenarios are tested against judgements of the rate of progress than can be sustained taking into account both financial and non-financial factors.

Where this process has been used it has required a core task group with technical capacity which may be complemented with technical assistance. Though it is generally located within Ministries of Education it is important to have active participation from Ministries of Finance, Public Service Commissions, and in decentralised systems provincial or state level stakeholders, and from development partners. In some cases substantial service providers

⁶ Meaningful access assumes not only enrolment but regular attendance, progression through grades at appropriate ages, and demonstrated learning achievement (see www.create-rpc.org).

outside government (NGOs and private providers) may need to be consulted along with teachers unions.

The plan development process should recognise the importance of viable implementation strategies at an early stage. This is necessary because clear lines of responsibility have to be identified, target setters must relate to target getters, and capacity constraints may exist that have to be addressed.

Long term plans have to be developed within a resource envelope. The budget envelope is generated from macro-economic projections of government revenue, budget shares for education and its sub-sectors, and from external assistance. The latter are often presented as “gaps” which need closing to develop a sustainable plan.

In the later stages of the planning process a consolidated paper should capture the fruits of analysis and project the options identified to wider groups of stakeholders. This group is likely to include key political post holders, officials across the Ministry of Education, other concerned line ministries, leading educational institutions, local governments, NGOs, teachers and education funding agencies. The precise forms consultation takes are context specific. They should lead to finalisation of the framework plan and settling on preferred options and actions which have consensus and commitment.

The final plan will include ten-year projections indicating anticipated student flows and participation rates, and estimates of budget requirements. It should note capacity and non financial constraints. It should harmonise plans for growth with likely resource flows and indicate where choices between priorities are necessary. It should include mechanisms to monitor and evaluate progress systematically. Its form should reflect iterations which reconcile ambitions with plausible rates of progress, and which recognise political and budgetary realities. The planning process described above can help political actors to reach agreement on policy, based on quality information and analysis, while also taking into account the values and beliefs of both the political and technical constituencies in the country. The process can increase the transparency that needs to surround political choices made in the public interest.

Projecting ten years or more into the future is very uncertain. Long term plans based on projections are not a suitable basis for detailed current year budgeting. Their purpose is to provide a rolling framework within which it is possible to anticipate the forward consequences of current policy, monitor achievements against objectives, and identify conditions that need to be met to reach desired goals. Any ten year plan must be reviewed periodically if it is not to lose currency.

4. Conceptualising an MTEF

Long term plans create the environment within which a Medium Term Expenditure Framework (MTEF) can be developed. The MTEF should be used as a primary planning and budgeting tool, projecting expenditures on key activities and revenues from the main sources for the sector over a five year period and rolled over annually. Rolling MTEFs need to include both recurrent and development expenditure by governments and by development partners. By projecting priorities for the budget in the medium term, the Ministry of Education will be in a position to consider sector priorities within the macro-economic constraints. MTEF papers are evolving discussions of how the sector considers its priorities in the light of strategic plans for the sub-sectors and so should change from year to year as these strategic plans unfold, relative priorities are established, and system performance indicators change.

A Medium Term Expenditure Framework (MTEF) is a policy and planning instrument which provides a framework within which decisions can be made on resource allocation designed to achieve policy goals within defined time periods.

4.1 Characteristics of an MTEF

It has several essential characteristics. An MTEF:

- Seeks to allocate resources within a clearly defined budget envelope for a sector or sub-sector over the medium term (say 5 years with a view forward for a longer period);
- Adheres to the principle of a single unitary budget for the sector or sub-sector within which all expenditure falls;
- Creates a rolling framework which needs to be updated at least annually, and modified flexibly to reflect changing circumstances and progress towards outcomes;
- Relates in an integrated way to MTEFs for other education related sectors and the national budget cycle;
- Reflects stated policy goals to which there is medium term commitment;
- Identifies appropriate targets against which progress can be assessed.

The purpose of an MTEF is therefore to shape allocative decisions and guide current year expenditure within longer-term patterns of resource allocation.

There are many advantages to planning within an MTEF. These include:

- Stability in resource flows directed towards strategically important objectives which require cumulative rather than ad hoc approaches to investment;
- Predictability in sector and sub-sectoral financing which can facilitate domestic and international sources of funding and minimise the chances of illiquidity and bottlenecks in the flow of funds;
- Clarity of policy choices for resource allocation where finances are limited and prioritisation is essential;
- Opportunities to share and explain resource allocation decisions with stakeholders at different levels and match local level aspirations with collective responsibilities and social benefits;

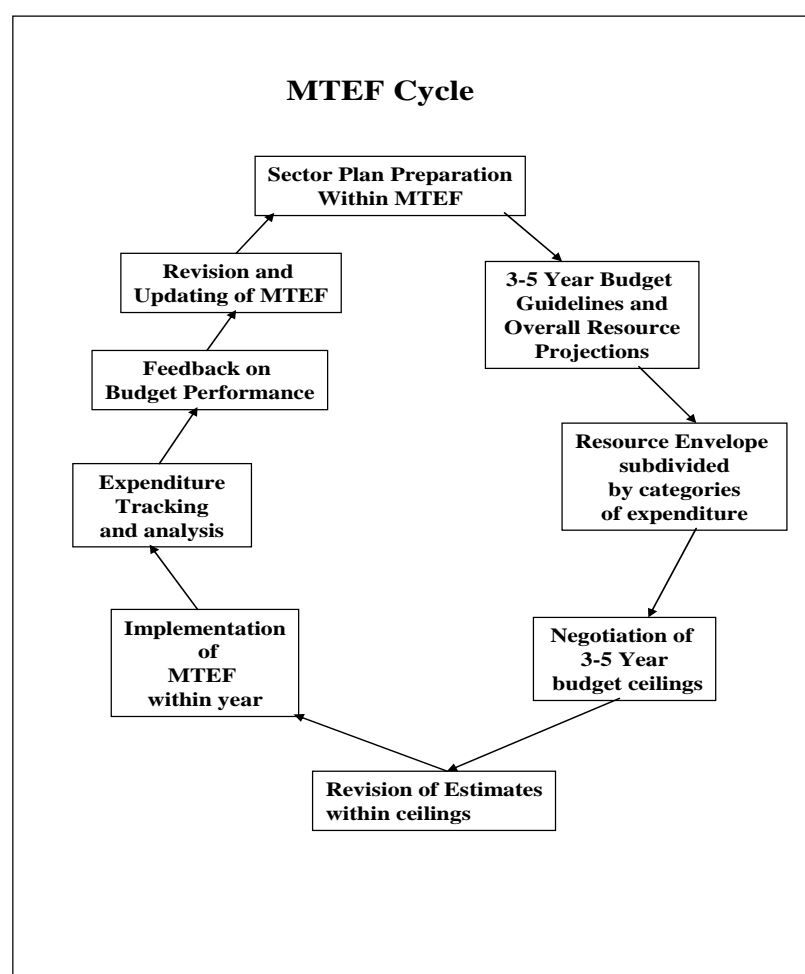
- Greater accountability and transparency in implementing development programmes designed to improve equity and efficiency and provide value for money in the use of public funds.

To be fit for purpose an MTEF has to become institutionalised within the national budget cycle. It seeks to move the emphasis in historic budgeting systems from incremental funding of on-going activities, to more demand led-financing driven by activities linked to defined priorities and outcomes. An MTEF is an evolving framework, not a detailed current accounting system for income and expenditure. It locates patterns of resource allocation within affordable ceilings determined by macro-economic conditions and national priorities. It indicates the forward budgetary consequences of current activities and changing patterns of demand, and links these to financially sustainable outcomes. It can identify gaps in financing that need to be addressed if development plans are not to stall.

Critically an MTEF requires rational choices between policy options, consensus about desired outcomes, and mechanisms to ensure that what is agreed is translated into effective service delivery assessed through the achievement of agreed targets. Public expenditure surveys and tracking systems are an essential complement to an MTEF since they provide insight into actual patterns of expenditure that can be mapped onto planned intentions.

A simple representation of the MTEF cycle is shown in Figure 6.

Figure 6 MTEF budget cycle



The existing sector plan is reviewed in the light of medium term overall resource allocation projections, including external assistance. This establishes a resource envelope which can be subdivided by budget categories (teacher salaries, non teaching salaries, learning materials, maintenance etc. and development costs), and by sub sectors (primary, lower secondary, upper secondary, TVET etc). Budget ceilings may need to be renegotiated when the resource envelope is matched with projected needs to achieve goals and objectives for the education sector. When this is agreed the MTEF can be consolidated and used for allocations for the next year. These can be translated into operational plans that can be implemented. Expenditure tracking and analysis should be on-going and give signals as to whether disbursement is following plans, and if not why not. From this and an annual MTEF and plan review process, the cycle then repeats itself.

Developing and using an MTEF requires changes in perspective and practice. First, resource allocation has to be seen as a process of managing a flow, rather than a series of events each subject to the micro-politics of competition for resources within discrete annual budget cycles. Its *raison d'être* is to smooth the flow and reduce uncertainty so that policy that requires cumulative investment is allowed to germinate and mature.

Second, an MTEF is essentially indicative and has to be seen as a mechanism to promote consistent prioritisation of agreed patterns of resource allocation over the medium term. This means that substantial departures from the framework should only be entertained if there are good reasons for revision. *Ad hoc* re-allocation undermines the probability of achieving goals.

Third, there are initial costs in introducing an MTEF. These include the development of the planning cycle to incorporate systematic identification and agreement on medium term plans, the translation of these into resource requirements, and the activation of monitoring systems needed to track expenditure. These costs are likely to be less than the benefits that are associated with predictable medium term support for activities, transparent processes of prioritisation, and shared commitment to outcomes. Well founded MTEF systems reduce the annual workload of the budget cycle since they anticipate future needs and expenditure.

4.2 Configuring the MTEF

Overall budget allocations for education are determined by macro-economic performance and by the prioritisation given to education in national spending plans. This sets short and medium term ceilings on public expenditure. Forward projections by the Central Bank anticipate real economic growth rates and revenue collection rates.

In its simplest form the MTEF will develop existing budget lines to feed into different categories of projected expenditure consistent with current classification systems. These are supported from the national budget and from external grants and loans. Figure 2 illustrates the overall framework. These budget lines will then be associated with changing patterns of demand arising from projected pupil flows and progress towards targets that have resource implications.

The MTEF model will be designed to allow iteration between demand driven expenditure and realistic budget envelopes that assume low, medium, and high real rates of growth in the overall education budget over five and ten years. These envelopes can be converted into the

associated share of GDP/GNP and of domestic revenue allocated to education under different growth assumptions.

The model can then indicate how recurrent and capital expenditure needs to be budgeted, and will be able to show the effects of different policy choices and rates of progress towards identified development targets for service delivery. It will also provide indications of the financial impact of different packages of efficiency reforms and quality improvement measures.

Projection models can simulate flows of resources needed under different policy scenarios. They generally have several modules (Appendix 1, Figure 7). These models are enrolment driven in the first instance since this the most fundamental cost driver. This is used to determine teacher demand and other services that can legitimately be linked to the numbers of children that require educational services. Different per capita unit costs can then be derived (e.g. teaching salaries per pupil, non teaching salaries as a proportion of teaching salaries, learning materials costs per pupil at different levels etc.). Changing patterns of investment at different levels (e.g. primary, secondary, pre-university, teacher training) can be monitored against planned priorities.

Teacher and school level cost drivers can be incorporated where appropriate to reflect expenditure that is associated with these units of analysis. Central costs may be partly linked to numbers of pupils, teachers and schools of different type on the assumption that there is some association between the volumes of service delivery and central costs for examinations, curriculum development, inspection, general administration, etc. However clearly some of these are relatively fixed costs that will not vary much with marginal changes in the size of the education system and they must therefore be projected in this way. How they grow will also be determined by public sector reform and changed working practices that may result in efficiency gains e.g. with the introduction of new information technologies.

All the cost related modules are designed to feed into a consolidated spreadsheet which aggregates costs under budget line categories to provide an overall picture of resource needs. This is then cross referenced to projections of the domestic resource envelope for education derived from national economic and revenue projections and policy on allocation to education. Foreign funded projects can also be included as and when they are integrated within the sector budget. The model will need systematic development to evolve into a form that is user-friendly and can be used in medium term policy dialogue.

An MTEF system and its projections can be used to explore key policy issues that include:

- Do unit costs at different levels (salary and non-salary etc) and in different types of institutions represent efficient and equitable allocation of resources? Thus e.g. is the ratio of costs at different levels – and hence investment in service delivery and access – consistent with stated goals and priorities. If tertiary unit costs are 10 times those at secondary and 25 times those at primary is this appropriate?
- Is overall expenditure (unit costs multiplied by enrolments) likely to be sustainable into the future?
- What efficiency and equity gains are available that would increase access and participation at affordable costs (e.g. by increasing student teacher ratios where these are low, and reducing that variance between schools?)

- What gains are available in productivity which have low costs but substantial benefits (e.g. reductions in absenteeism linked to modest incentives?).
- Which quality improvement measures offer most gains in learning achievement at the lowest cost per pupil?
- Are the indirect costs of teaching and learning excessive and can they be reduced (e.g. where substantial salary costs are allocated to administrative activities that do not contribute directly to learning and teaching)?
- Is investment in capital programmes adequate to complement recurrent expenditure in effective ways?
- How much of the total costs of participation are financed publicly at different levels, and how much can and should households and individuals contribute in ways that preserve equity?

The policy process needs to generate answers to these questions. The methods that can be used include:

- Enrolment-driven projections of demand linked to unit costs, productivity gains, and quality enhancement programmes;
- Benchmarking against within system and cross national indicators;
- Best practice reviews of effective institutional practice on service delivery;
- Experimental reforms in school and higher level management systems to deploy resources more effectively and efficiently;
- Cost accounting exercise to establish the unit costs of different aspects of service delivery and identify cost saving actions;
- School mapping linked to optimising effective service delivery.

There can be difficulties in harmonising 10 Year Planning Projections with MTEFs developed prior to the projections. This can arise from:

- MTEFs developed without the benefit of a long term planning framework making different assumptions about growth, especially if they use historic budgeting to shape the MTEF;
- External shocks creating substantial budget constraints or windfalls creating opportunities in the short term;
- External finance flowing outside the MTEF into project based support, especially if it carries recurrent cost implications;
- Lack of understanding of the goals, premises and assumptions of ten year plans;
- Lack of concern for future budget deficits generated by short term policy decisions;
- Fungibility of allocated funds between established budget lines;
- Interactive effects on the Ministry of Education MTEF from allocations to education and training to other Ministries and parastatals etc.
- Complex multi-channel devolved systems of decentralised funding whereby allocations to educational flow through different channels (central funding, separate funding of provincial governments etc).

Appendix 1 provides more detailed discussion of the three approaches to planning detailed above. Appendix 2 elaborates on aspirational planning and gradients of achievement. Appendix 3 explores issues concerned with targets and indicators of performance. Appendix 4 contains a selected list of source materials.

5. Concluding Remarks

The approaches to long term planning suggested in this paper provide the basis for developing 10 year plans. Such plans are not blue prints so much as rolling frameworks that need to be adjusted at least annually in the light of events, achievements and changing goals. These frameworks allow progress to be judged and realistic goals to be set that are achievable. As a policy tool they can draw attention to critical inputs, non-financial constraints, and resource needs. They also sharpen understanding of the need to anticipate how participation will evolve and what consequences flow from different rates of development.

Without longer term planning which is updated systematically and linked coherently to future needs it will remain difficult to achieve sustained growth in participation. Education systems are complex architectures of related parts. The challenges of EFA and the MDGs are to build capacity cumulatively in the most efficient and effective ways that make the best use of scarce resources. Without a developed planning framework with vision and foresight, crisis management and ad hoc decision making will overshadow the sequential roll out of services, and resources will be poorly utilised.

Appendices

Appendix 1 Three Educational Planning Modalities

Planning Lite

The simplest method of outlining the aggregate the recurrent costs of expanding schooling towards target levels (e.g. Gross Enrolment Rate (GER)⁷ =100%) can be calculated using the equation:

$GER = X / A * C$ where:

X = Public expenditure on primary/secondary education as a percentage of GNP

C = Public recurrent expenditure on primary/secondary schooling per student as a percentage of GNP per Capita

A = The proportion of the population of primary/secondary school age

It follows that:

$$X = GER1 * A * C$$

The values of **A** for primary in SSA vary from 10% (Sao Tome and Principe, Seychelles) to 22 % (Malawi, Kenya) with an average of 17.6% for countries with a GNP/capita below \$1500. **A** for lower secondary ranges from 5% (Botswana, Ethiopia, Kenya⁸, Mozambique, Seychelles, Zambia) to over 10% (Benin, Burundi, Cameroon, Central African Republic, Cote d'Ivoire, Gabon, Mali, Sao Tome and Principe, Senegal, Sierra Leone, Togo, Uganda, Tanzania, Zimbabwe). At upper secondary the range for **A** is from about 3% (Malawi, Seychelles, Sao Tome and Principe, Malawi) to over 9% (Angola, Cote d'Ivoire, DR Congo, Ethiopia). In both cases it is highest where lower secondary cycles are longest and population growth lowest and vice versa. The averages for lower and upper secondary in low income countries are 8.8% and 6.9%.

Comparable data on **C** for SSA is more incomplete. The average at primary level for 16 SSA countries is 12% with a range between 5% (Madagascar) and 20% (Namibia). This is somewhat less than the average for developed countries of 19%. It represents a minimum level likely to be needed for effective primary schooling. **C** at secondary level is very variable between countries, and between lower and upper secondary. It is affected by the ratio of teachers salaries at different levels, the mix of boarding, the number of specialised schools, and the extent of subsidy of non-government provision, and the magnitudes of administrative and non salary expenditure. UIS data (17 cases) suggest that unit costs at secondary average about 25% GNP per capita in SSA and values tend to be higher in the countries with the lowest enrolments. Mingat (2005) estimates **C** as averaging 31% at lower secondary and 63% at upper secondary with very wide dispersions in each case⁹.

Using this identity and knowing the country specific values of **A** and **C** allows estimates to be made of the costs of achieving different target levels of GER. These can then be coupled with

⁷ GER = Gross Enrolment Rate. If NER is preferred then a range of assumptions need to be made explicit about entry ages, repetition, and overage enrolment.

⁸ The four year cycle in Kenya has been treated as 2+2 in this analysis.

⁹ Based on 17 World Bank Sector Studies.

enrolment data and school age population growth rates to establish costs in the future as systems expand.

These estimates can be compared with current budget allocations, proposed budget shares for different levels of education, and projected growth in GNP and domestic resources to arrive at gaps in financing that would have to be met.

This *lite planning* is a useful proxy for financial demand created by expansion. It is however limited in value. For example it:

- Assumes current cost structures are appropriate when they may be inefficient and inequitable
- Takes no account of systemic reforms that may be necessary and desirable and cannot model these in any detail
- Does not recognise the non-financial constraints on growth – e.g. teacher supply, infrastructure capacity – or the need for quality improving interventions coupled with expansion
- Does not recognise demand side constraints on participation (e.g. affordability of direct and indirect costs of attendance amongst poor households)
- Does not address development costs
- Indicates financial requirements independent of likely budget/MTEF and other envelopes determined by political and economic processes outside its view.

Table 1 uses typical Sub Saharan African data to show the costs of expansion over 10 Years from a baseline of GER1=100%, GER2L=30% and GER2U 20%¹⁰. In the first year 4% of GNP is needed to support the system. If primary GERs rise to 110% (to include repetition and overage enrolment) secondary GER grow from 30% to 100%, and upper secondary from 20%-50% by 2015 7.7% of GNP would be needed, assuming some growth in higher education participation.

This would be difficult to finance from domestic resources and is about double the current SSA average allocation to the education budget. The values of X (unit costs relative to GNP) would have to fall to achieve these participation rates.

Table 1 Planning using $X = GER1 * A * C$

2006	GER	A	C	X	2011	GER	A	C	X
Primary	100%	17%	12%	2.0%	Primary	100%	17%	12%	2.0%
Lower Secondary	30%	8%	30%	0.7%	Lower Secondary	70%	8%	30%	1.7%
Upper Secondary	20%	6%	60%	0.7%	Upper Secondary	30%	6%	60%	1.1%
Higher Education	2%	5%	500%	0.5%	Higher Education	3%	5%	500%	0.8%
Total				4.0%	Total				5.6%
2007					2012				

¹⁰ This example uses different data for typical values for some parameters than projections in Section 1 which include countries with GNP per capita over \$1500.

Long Term Planning for EFA and MDGs

	GER	A	C	X		GER	A	C	X
Primary	110%	17%	12%	2.2%	Primary	110%	17%	12%	2.2%
Lower Secondary	35%	8%	30%	0.8%	Lower Secondary	80%	8%	30%	1.9%
Upper Secondary	21%	6%	60%	0.8%	Upper Secondary	35%	6%	60%	1.3%
Higher Education	2%	5%	500%	0.5%	Higher Education	3%	5%	500%	0.8%
Total				4.3%	Total				6.2%
2008	GER	A	C	X	2013	GER	A	C	X
Primary	110%	17%	12%	2.2%	Primary	110%	17%	12%	2.2%
Lower Secondary	40%	8%	30%	1.0%	Lower Secondary	90%	8%	30%	2.2%
Upper Secondary	23%	6%	60%	0.8%	Upper Secondary	40%	6%	60%	1.4%
Higher Education	2%	5%	500%	0.5%	Higher Education	4%	5%	500%	1.0%
Total				4.5%	Total				6.8%
2009	GER	A	C	X	2014	GER	A	C	X
Primary	110%	17%	12%	2.2%	Primary	110%	17%	12%	2.2%
Lower Secondary	50%	8%	30%	1.2%	Lower Secondary	100%	8%	30%	2.4%
Upper Secondary	25%	6%	60%	0.9%	Upper Secondary	45%	6%	60%	1.6%
Higher Education	3%	5%	500%	0.8%	Higher Education	4%	5%	500%	1.0%
Total				5.1%	Total				7.3%
2010	GER	A	C	X	2015	GER	A	C	X
Primary	110%	17%	12%	2.2%	Primary	110%	17%	12%	2.2%
Lower Secondary	60%	8%	30%	1.4%	Lower Secondary	100%	8%	30%	2.4%
Upper Secondary	28%	6%	60%	1.0%	Upper Secondary	50%	6%	60%	1.8%
Higher Education	3%	5%	500%	0.8%	Higher Education	5%	5%	500%	1.3%
Total				5.4%	Total				7.7%

Framework National Plans

Framework National Plans seek to develop dynamic projections of enrolments and unit costs from a current baseline towards target outcomes. If the planning model is adequately specified with parameters which capture disaggregated costs (teachers salaries, pupil teacher ratios, non teaching salaries, learning materials etc) and how they would change with specified policy interventions, it becomes possible to simulate different policy decisions (e.g. on fees, capitation, boarding, teacher deployment etc). It is then possible to iterate between anticipated resource envelopes and desired outcomes to arrive at financial sustainable strategies for education system development.

The sensitivity of both expenditure and outcomes to changes in practice can be identified. Quality gains can be proxied by increased inputs, and linked to anticipated outputs. If quality improvements in process can be costed, they can also be included.

This kind of planning requires more intensive work over longer periods (2-6 months) to generate confidence in the values chosen for parameters, develop integrated dynamic data systems, and test out plausible policy scenarios. It requires substantial technical expertise coupled with close interaction with policy makers in Ministries of Education and Finance and development partners.

A well specified enrolment driven model will include a range of fairly standard parameters as well as those that are specific to each system. It thus needs to be developed to reflect differences between countries which determine the existing patterns of expenditure, the opportunities and risks associated with programmes of reform, and the non financial constraints on growth in participation.

The process for developing this kind of planning system involves a number of steps.

First a baseline model has to be constructed using the best available data from EMIS and from census data on school age children. This is not always straightforward and invariably involves some proxies and best estimates. The underlying idea is to chart the flow of enrolments (boys and girls) forward from a baseline using actual and desired entry, promotion, repetition, drop out and transition rates.

Second, this is coupled with a disaggregated model of unit cost for different activities including direct teaching costs, non teaching salary costs, learning materials and other non salary costs (maintenance, boarding, transport, food etc), administration and other costs at district, zone, state, national level (including inspection, curriculum development, in-service training, special needs schools etc).

Third, the demand for teachers can be generated from enrolment growth and assumptions about pupil teacher ratios. Flows needed into teacher education should be included on both the enrolment and cost side to ascertain what issues emerge for teacher supply. Rapid expansion creates greatly increased demand for teacher training and this needs to be anticipated¹¹. This is especially critical where there are significant time lags between entrance to training and availability to teach.

Fourth, flows of students into other parts of the post school education and training system can be included but there may be diminishing returns on detailed planning if provision is highly fragmented and very variable in participation and costs between institutions¹². Post school education and training and higher education is generally better treated separately, not least because it is not usually driven by demography and is subject to different political considerations. Aggregate public costs in post primary and especially higher education are important to capture since they can represent disproportionately large amounts of the education budget with very high unit costs. They may squeeze out investment growth at other levels.

¹¹ Teacher training demand is a derivative of enrolment growth. The rate of expansion in training may need to be many times that of enrolment growth.

¹² This comes back to the question of what is being planned.

Fifth, development expenditure also needs to be anticipated. This can be achieved with known costs of classroom and school building¹³ by identifying demand created by additional enrolment. In addition estimates have to be developed of the current stock of building and facilities and any needs there are to bring these up to levels specified as sufficient for effective learning and teaching.

Sixth, population data on the school age group is needed to predict the number of places needed at given enrolment rates. This can be problematic if census data is unreliable and outdated, and if large movements of population are taking place (e.g. internal migration, cross border migration).

Seventh, the existence of non-financial constraints on growth arising from capacity constraints (e.g. the rate at which classrooms can be constructed, the length of time it takes to train teachers, the robustness of demand for teaching training, the production process for textbooks and other learning materials) needs to be explored for critical bottlenecks.

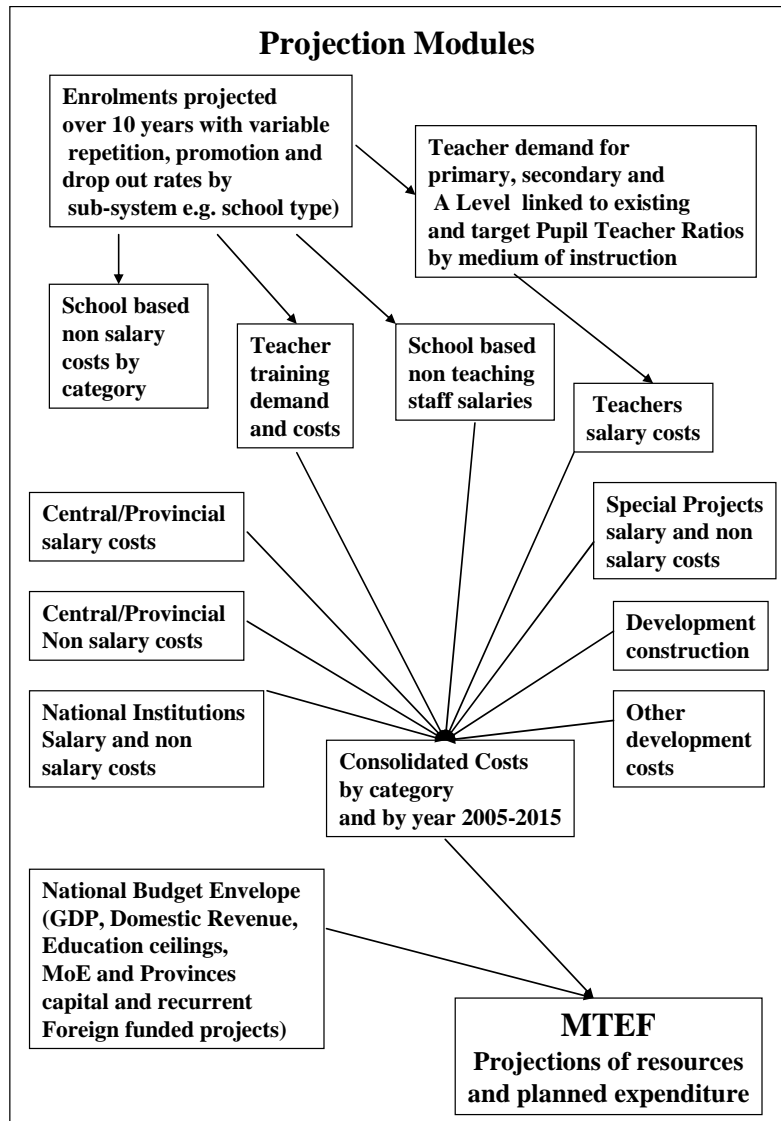
Eighth, a separate projection system is needed for resource flows. This is generally derived from Ministry of Finance expectations of future growth, budget shares and external assistance. These create the resource envelop

Scenarios can be developed over 10-15 years which respond to policy goals (universal enrolment, gender equity, 100% completion rates, transition rate targets etc) which identify the incidence of expenditure that would be needed. Typically three or more variants are developed indicating the consequences of different target levels and policy choices. This can be used to identify resource gaps and their behaviour over the projection period.

A projection model can then be built which can project forward for 10 or 15 years the evolution of enrolments, generate the expenditure necessary to support planned growth, and compare this with anticipated flows of resources (see Figure 10).

¹³ Classroom cost alone are insufficient. Additional classrooms may be less than a third of the cost of classrooms in new schools when all costs are accounted.

Figure 7 Projection modules



Participatory Planning

A third level approach to ten year planning is participatory at the local level. It has to be long term and systemic. It cannot be achieved on a short time scale. It requires the development of plans below the national level by appropriate administrative units closer to schools and to service delivery. It is intended to reduce the distance between national planning and those who have responsibilities for implementation. It is generally configured using participative activities which engage relatively local stakeholders in developing local plans in which ownership is shared.

Thus some countries have embarked on long term decentralised planning processes that seek to assess need against criteria and targets, generate detailed local plans for meeting needs, and progressively integrate these plans into higher level plans through the administrative structure to national level.

Though the principle the process is simple, its actualisation requires considerable persistence, capacity building, commitment to devolved responsibilities, and high levels of commitment from those involved.

Institutional level plans, the logical starting point, rarely require sophisticated projections. They most usefully concentrate on short to medium term needs for physical resources and aspects of school management and staffing that most affect the quality of learning and teaching. At the next level (zone/district/region) priorities have to be set and forward looking plans need to balance differing interests and respond to likely changes in demand in the context of a plausible resource envelop. What happens next depends partly on the level and extent of devolution to different levels and the degree of autonomy that administrative authorities have over resources, teacher deployment, capitation grants etc. This varies so much any generalisation is fragile.

Where decentralised medium to long term planning works it can offer many real advantages. Implementation is more likely when ownership of the plan is a reality; sustainability is more likely when consensus has been reached; targets set at a local level after consultation have more currency than those projected from national levels.

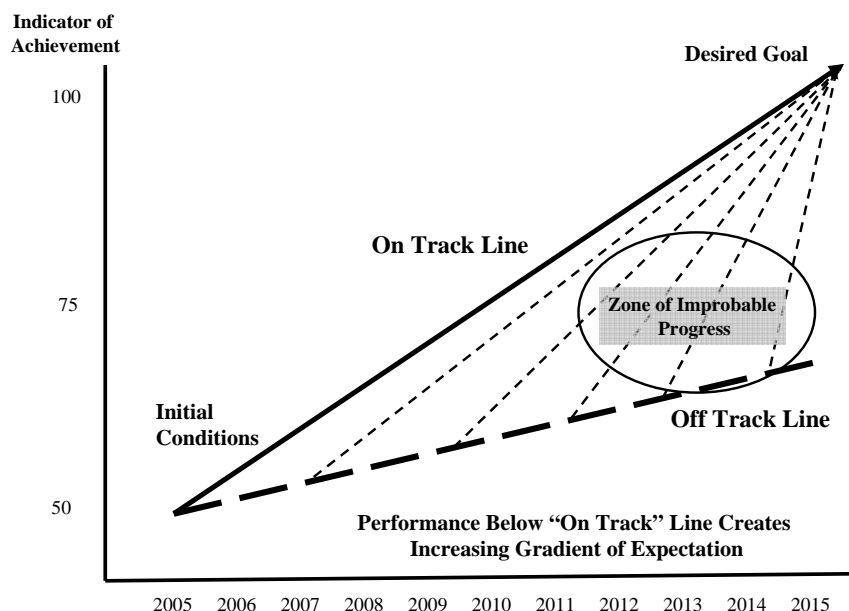
However there are difficulties with these decentralised processes which include

- Inadequate local capacity to plan for the medium term
- Lack of guidance concerning realistic resource envelopes
- The influence of special interest groups and local political processes which may be in tension with national policy goals
- The complexity of aggregation, and the transaction costs of harmonising many, sometimes conflicting, plans at different levels
- Failure of the most deprived locations to generate plausible plans
- Disillusionment with higher level authorities capability to respond to vertical and ascending flows of information
- Problems with overlapping local structures of ownership, accountability and access to resources and of administrative responsibilities.

Participatory planning of this kind is not very useful for Long Term Planning. It is time consuming, involves considerable transaction costs, and may lack coherence. It is most likely to work where there are stable systems of local governance with capacity to develop and negotiate plans with stakeholders and service delivers within a context of macro economic predictability and representative institutions.

Appendix 2 Gradients of Achievement and Aspirational Planning

Figure 8 Gradients of achievement



Explanation

Aspirational planning sets goals in the future (e.g. Net Enrolment Rate (NER) = 100%, gender parity, 100% primary completion). Most projection models then draw back a pathway to the present which indicates what needs to be achieved each year to stay on track. The pathway is often linear. What often happens in practice is that financial (time slippage related to agreeing plans, signing off agreements, disbursing tranches of funding etc) and non financial constraints (lead times on construction, teacher training, softening of demand to enrol and progress etc) lead to under achievement below the on track line. The gradient of what needs to be achieved then progressively steepens to the point where the planning and implementation system enters a Zone of Improbable Progress (ZIP). Either the goals fall into disrepute because they are unachievable and there is no confidence in the modalities of making more and more rapid progress, or the goals are redefined and time shifted (as with gender parity goals)

If a non linear approach is taken (which is more realistic), the gradient of achievement needed become concave and also steepens as time progresses, but in a planned way. This is only sustainable if increasing rates of change (more and more rapid school building, teacher training, textbook supply etc) are sustainable and there is capacity to keep on track.

In both cases target generating planning based on the estimates of the highest sustainable rate of expansion that does not degrade quality to unacceptable levels offers a better basis for operational plans and mobilizing assets efficiently and effectively. This depends on forward projections which draw attention to critical limitations of capacity, infrastructure and finance, and identifies forward commitments generated by present actions. It can also result in scenarios where the position in 2015 is not one of being on the steepest part of an S-Curve with no answer to what happens after 2015.

Appendix 3 Notes on Targets and Indicators of Performance

In developing targets several principles should be applied. These include:

- Policy priorities in the medium term and desired outcomes must be clear
- Baseline values should be known with confidence
- The method of measurement should be clear, transparent, and as unambiguous as possible
- The cost of measurement should be acceptable
- The process of measurement should not distort service delivery
- Targets should be set that are achievable, not simply aspirational
- Assessments of progress towards targets should be in the public domain
- Too many targets reduce the value and visibility of each
- Target setters have to identify target getters, communicate targets effectively, and gain consensus and commitment to their achievement.

Targets can be specified in several different ways and choices have to be made:

- Absolute targets – e.g. the NER should reach 98% in year 2015
- Relative improvement targets – e.g. the proportion of pupils achieving mastery of the grade 4 curriculum should increase by 10% a year
- Average or Distributional targets - e.g. primary student teacher ratios in a district should average 40:1 or primary student teacher ratios in a zone should fall within +/-10% of the district average.

Targets can be specified at different administrative levels:

- National
- Provincial
- District
- School

and for different educational levels and school types:

- Primary, Lower and Upper Secondary
- Government, Grant maintained, Private
- General, TVET

Other sub-sectoral divisions are possibly useful:

- Medium of instruction
- Urban, and rural
- School serving populations with different levels of socio-economic deprivation and poverty (poverty index needed by district)
- High and low examination performance
- Small and large schools

It is important to distinguish between input targets (e.g. provision of laboratory and IT facilities), process targets (e.g. effective learning in schools for 95% of pupils for 95% of days in the school year), and outcome targets (e.g. average pass rate at national examination of 60%). Where distribution is a concern targets which specify numbers/proportions exceeding a threshold may be more useful than averages (e.g. 90% of pupils exceed minimum competency scores on numeracy).

Thought needs to be given to data collection and analysis. Wherever possible the assessment of progress should be based on existing data collection systems that serve several purposes e.g. the school census, teacher registers, public examination results. Methods of analysis have to be robust but also have to be accessible and understood by stakeholders responsible for achieving targets.

Links between resource allocation systems and performance have to be carefully considered. Thus providing additional resources to schools which are improving can act as an incentive for more effective management and enhanced learning outcomes. This has to be accompanied by strategies to address the needs of failing schools which will have less chance of improving if they receive fewer resources. Incentives for individuals (e.g. buy-back of paid leave entitlements, performance related bonuses) have different qualities to institutional level incentives (e.g. school level recognition for increased participation, attendance and completion rates).

Which Targets Matter?

Most educational plans prioritise:

- Promoting more equitable access to basic and secondary education,
- Improving quality,
- Enhancing the efficiency and equity of resource allocation
- Strengthening educational governance and service delivery.

Targets may be needed in each area.

Access

First, targets are needed for improved access to primary and secondary schooling. Gross (GER) and Net Enrolment Rates (NER), and Completion Rates, are the most obvious indicators¹⁴. These can be monitored for different sub-populations to establish whether differences between groups are diminishing and thus whether access is becoming more equitable. Where enrolment rates are low and unevenly distributed they can be useful indicators. GER is easier to measure than NER which depends on accurate age grade data etc. Neither is very useful where enrolment rates are high since changes will be small year on year and may be within margins of error in measurement.

Completion rates are important but can be assessed in different ways. Comparison of the number of non repeating pupils in the last grade of a cycle with those entering the cycle x years earlier is a reasonable proxy where repetition rates are low. Adding complexity to this (e.g. the number in the last grade of the correct nominal age, compared to the number in the

¹⁴ These are output measures which may need to be accompanied by process and input indicators

entry grade x years before of the correct nominal age) may not add much to the value of the indicator, especially if consistent improvement is the main priority.

Transition rates (e.g. primary to secondary) can be defined as $\text{Transition rate} = (\text{Number in first grade secondary} - \text{repeaters}) / (\text{entrants to S1 the following year})$. This can create misleading signals. Thus this indicator can fall even when secondary entrants are growing, if they are growing slower than primary output. High transition rates can coexist with low output from primary.

Rates of attendance are linked to quality and outcomes. They are also relatively easy to monitor at school level and to aggregate to higher levels. Since this administrative data should be collected as a matter of course in schools, and is a basis for interventions to improve attendance, it probably should be a performance indicator. GERs and NERs conceal erratic and low attendance.

Age of entry and age grade distributions are also important for access and quality. If these can be monitored they can be targeted from improvement.

Teacher supply and demand partly determines meaningful access. Most importantly these are determined by the capacity, costs and time lags in training teachers, and by salaries, deployment and utilisation of teachers. For given pupil teacher ratios and salaries as a proportion of GDP, there are unavoidable constraints on expanded access arising from realistic levels of education budget commitments in relation to GDP. More subtly within this constraint, what is actually delivered in terms of learning opportunities depends also on teacher class ratios and time on task.

Quality

Second, proxy indicators of quality are levels of achievement, learning resource inputs, learning and teaching process, and levels of utilization of learning resources. Assessment test results provide measures of achievement (preferably criterion rather than norm referenced) and can be used for monitoring learning achievement. There are technical problems in using selection examinations that are not criterion referenced for monitoring learning. Such examinations may not be taken by all pupils leading to selection effects that can vary from year to year. Public examinations in Sub Saharan Africa tend to be more norm than criterion referenced. Standards may vary from year to year. Substantial increases in pass rates are unlikely from year to year if norm referencing is a reality. When they occur the first explanations may not be the result of increased learning achievement, but easier tests. If the intention is to monitor achievement then sample based criterion referenced testing for this purpose is the most attractive option. If performance based allocation of resources is the goal then learning achievement has to be assessed in all schools raising questions about its costs over an above those of normal public examinations, and the backwash effects on the curriculum.

Learning resource inputs can be judged from expenditure on specified items (learning materials, enhanced facilities) and their physical existence (books per child, tables and chairs etc). Learning and teaching process can only be assessed on-site through observation and discussion. School inspection reports could provide information on this but may not be sufficiently detailed or standardized to use as monitoring or performance indicators. Levels of

utilization of learning resources require some assessment of patterns of use and are difficult to monitor, except through school based management systems.

Efficiency and Equity

Third, internal efficiency is partly indicated by costs per successful graduate from an educational cycle, and from the average number of years of schooling that need to be provided for completion. It may also be indicated by the distribution of costs between teaching and non-teaching staff, levels of teacher utilization in classroom teaching (actual teaching loads and class sizes), and rates of repetition and drop out. It is linked to effectiveness since costs per pupil only have meaning in relation to useful learning. Costs per pupil at different levels also give some indication of relative efficiency and need to be monitored between sub-populations if equity is a goal. So also do analyses of learning material provision, teacher qualification and deployment, and learning achievement. These can help identify inputs likely to have the most impact at least cost on learning outcomes.

Equity in resource allocation, especially that related to uneven public subsidies to different sub-populations, requires distributional measures of direct inputs (e.g. variations in staff student ratios, teacher productivity, class size, teaching costs per pupil and total costs per pupil). It can also be assessed through distributional measures of physical inputs (textbooks per child, access to school libraries, science rooms, laboratories and ICTs), and access to in-service support for teachers. Aggregation (e.g. average student teacher ratios, class sizes, and costs per pupil) can conceal the true extent of inequity in allocation which has to be judged at school level as well as between schools. Disparities in learning achievement (girls and boys, urban rural etc) are part of any comprehensive judgement on equity.

Vulnerable groups (especially in some countries girls, HIV/AIDS orphans, those with disability, and those socially excluded or disadvantaged by livelihood style) have to be considered since they represent disproportionate numbers of those excluded. In some cases indicators are clear and invite specific interventions (e.g. older girls may drop out at a greater rate than boys for cultural reasons and if so their completion rates will be more adversely affected by over age enrolment). In other cases vulnerability may result in various kinds of silent exclusion¹⁵ which are more difficult to assess.

¹⁵ See www.create-rpc.org

Governance and Service Delivery

Fourth, educational governance is difficult to assess. Where inputs are specified they can be judged (existence and regular functioning of a school management committee, parent teacher association, audited accounts, delegated authority etc). If effectiveness is best judged by outcomes then it is indicators of service delivery that apply. These are already included in enrolment, completion and attendance rates and other indicators for different sub-populations, and in achievement data.

In addition to input and output performance targets for the education system it may be desirable to consider performance targets related to disbursement. These need definition and expenditure tracking systems which can provide data on flows of resources from source to service deliverer. This can be helpful in identifying bottlenecks and inefficiencies, and unnecessary transaction costs. They can be defined in terms the proportion of allocated funds (e.g. capitation) reaching particular target groups, especially those identified as having special needs for quality improvement and enhanced learning outcomes.

Appendix 4 Useful Planning Materials

Useful source material on aspects of planning and access can be found on:

- The Secondary Education in Africa (SEIA) programme of the World Bank explores secondary expansion issues.

http://www.worldbank.org/afr/seia/docs_conf_0604.htm and
http://www.worldbank.org/afr/seia/donors_meet_10_04.htm
<http://www.worldbank.org/afr/seia/thematic.htm>

- Tools for Education Policy Analysis Mingat A, Tan J-P, Sosale, S World Bank
<http://www.worldbank.org/reference/>
- The DFID-funded Sri Lanka Primary Education Planning Project exemplifies planning methods used at the National and Provincial level between 1998 and 2000 in relation to Sri Lanka's National Policy on Education. See www.ioe.ac.uk/leid/slpepp. This website includes a manual of planning methods developed by national and provincial level planners, the outcomes of exercises in long range educational planning (National and Provincial Plans) and reflections on the policy-planning process in relation to national policy, national planning and EFA. The website includes the DFID monograph no 46 *Education for All policy and planning: lessons from Sri Lanka*. These lessons were shared with the global EFA community through the first issue of the EFA Global Monitoring Report
- Planning issues in teacher education for primary expansion from the DFID-funded Multi-Site Teacher Education Research Project (MUSTER) can be found at <http://www.sussex.ac.uk/usie/muster/index.html> and <http://www.dfid.gov.uk/pubs/files/researchteachedpaper49a.pdf>
- The Uganda Post Primary Plan provides an example of an integrated planning exercise that recognizes primary flows and demands but focuses on secondary development. These plans are currently being updated (2006). Web Reference <http://www.sussex.ac.uk/education/1-4-21-14.html>
- Material on planning science education can be found at <http://www1.worldbank.org/education/scied/documents/Lewin/labor.pdf>
<http://www1.worldbank.org/education/scied/documents/Lewin/Mapping.pdf>
http://publishing.unesco.org/details.aspx?Code_Livre=1470
<http://unesdoc.unesco.org/images/0009/000923/092308e.pdf>
- Issues related to Non Government Providers can be found at <http://www.dfid.gov.uk/pubs/files/nongov-2nd-schooling-africa.pdf> and <http://www.idd.bham.ac.uk/service-providers/downloads/stage-2/NSP%20South%20Africa%20report%2023-03-05.pdf>

- Financing Education (IIEP, DFID)
<http://unesdoc.unesco.org/images/0012/001248/124844e.pdf>
<http://www.dfid.gov.uk/pubs/files/eddevissevedpaper06.pdf>
- CREATE – The Consortium for Research on Educational Access, Transitions and Equity (DFID) – is developing programmes of research related to expanded access at primary and secondary levels. See:
<http://www.create-rpc.org>



Consortium for Research on
Educational Access, Transitions & Equity
Funded by DFID

Report summary:

Long-term planning is needed to develop strategies that can support expanded access to primary and secondary schools and ensure that adequate resources are made available both in the present and into the future. To date, too little attention has been given to the underlying principles and practical methods that can shape planning processes which recognise the financial and non-financial constraints on growth over more than the short term. This paper provides examples of different approaches to planning, develops detailed discussions of the steps necessary to generate national framework plans that link desired goals and targets to resource flows, and suggest how these can be integrated with medium term expenditure frameworks.

Author notes:

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