The South African Institute of International Affairs

Nepad Policy Focus Series

Back to the Blackboard

Looking Beyond Universal Primary Education in Africa

Edited by
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SAIIA's Nepad and Governance Project is funded by the Royal Netherlands Embassy, Pretoria.

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THE SOUTH AFRICAN INSTITUTE OF INTERNATIONAL AFFAIRS

ISBN: 1-919969-16-0

Nepad Policy Focus

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Executive Summary

Education is the driving force behind any strong economy and a prerequisite for social and economic growth. It creates opportunities and provides societies with a better educated and skilled workforce which is necessary for stimulating development.

But in sub-Saharan Africa, the region with the highest levels of illiteracy in the world, many pupils are still being denied their fundamental right to quality education. According to the United Nations more than 40 million children - almost half of the continent's primary school-age-pupils - are not in school. About two-thirds of these children are female. Fewer than half of Africa's children get a chance to finish primary school.

Africa should be commended for moving, albeit modestly, toward the Millennium Development Goal (MDG) of Universal Primary Education (UPE). But at the current slow pace of enrolment growth, Africa will not achieve UPE until at least 2150 and even then it may not acquire the skills it needs to truly develop.

The United Nations Educational Scientific and Cultural Organisation's (Unesco) global monitoring report released in 2004 which tracks countries' progress in achieving UPE found that 22 countries in sub-Saharan Africa were far from achieving the Education for All goals. Primary enrolments are low, gender ratios highly unequal, illiteracy is widespread and educational quality is poor, leading to high drop outs which means that many pupils never complete primary school.

Many African countries have well-intended plans to implement the MDGs but not the resources to implement them. The lack of dramatically increased aid and debt relief has hamstrung progress. Development aid to basic education in Africa needs to increase significantly to achieve universal primary completion. Africa's poorest countries are still spending an average of 15% of revenue on debt servicing. Donors have promised to deliver increased support to countries whose policies meet tough standards of quality, equity and efficiency, but an extra $1 billion to $2 billion in upfront commitments is needed now to support education.

Africa needs a two-prong strategy. Firstly, African governments need to ensure that money currently received from donors and allocated in

budgets are spent efficiently. Secondly, African governments need to negotiate harder and hold the developed world to their promises.

In some countries UPE drives are compromising educational quality. Cash-strapped governments are raising enrolments drastically without significantly more teachers and resources.

Increases in primary enrolment necessitate an expanded secondary education sector; an area sorely neglected in Africa's schooling system. For education to deliver the economic spin-offs the continent desperately needs, primary schooling has to be complemented by secondary education that provides pupils with the skills and knowledge needed to propel development. What will become of the millions of primary school graduates in 2016, or even 2151, if we do not plan for their secondary schooling and what value will they add to development in their countries?

The report's five chapters examine the state of play of education on the continent and highlight the challenges which need to be addressed. This report seeks to get governments, donors and policy makers to start thinking and planning ahead to cope with the expected successes of UPE.

Some of the key findings include:

Teacher quality and quantity must be improved. UPE has increased the demand for teachers, but they are in short supply and are often not adequately trained. Unesco predicts that the continent need s at least three million more teachers to cope with increasing enrolments. Therefore, Africa needs to radically expand recruitment of new teachers and attract the brightest school leavers to the profession. And Africa must upgrade the competencies of existing teachers through on-the-job training.

Teacher salaries must be raised. Teachers are paid extremely poorly and therefore it is no surprise that the continent fails to attract the brightest and best school leavers to the profession. Highly competent educators often leave teaching for better paying positions and many school leavers choose teaching for a lack of anything better. Countries therefore need to raise teacher salaries, offer incentives and seek to improve working conditions.

Measuring results is a prerequisite of progress. Less than a third of the pupils on the continent acquire the basic reading, writing and arithmetic skills necessary for the successful completion of primary school. African

pupils lag behind their Asian and Latin American counterparts. Improving outdated assessment methods and curricula can improve results.

Maths and science education need dramatic improvement. These crucial subjects are neglected in African education and there are not enough trained teachers, infrastructure and equipment to teach the subjects. Few pupils pursue these subjects at secondary school and even fewer pass. In the Third International Mathematics and Science Study Repeat in 1998, which measured student performance in 41 countries across the world, South Africa's average score (of 275 out of 800) placed the continent's technology leader well below the international average of 487 and behind economic competitors Indonesia, Chile and Malaysia.

Secondary education is as important as UPE. Educational opportunities beyond primary school are limited in Africa. Secondary school is where students gain skills of significant economic value. But the World Bank estimates that about 25% of primary school graduates enrol at secondary level and only about 10%of them complete their education. Expanding and increasing spending is essential but government reform must ensure that quality is improved. The challenge is for expanded secondary education to complement UPE, not compromise it.

Educating girls deserves more attention. Most governments are neglecting their immediate target of balancing the number of girls and boys by 2005. The UN International Children's Fund (Unicef) predicted that some 24 million or 60% of girls in sub-Saharan Africa were not in school in 2002. Educating girls will have economic benefits and will help reduce soaring HIV/Aids levels but countries are failing to translate their commitment into budgetary allocations. Female enrolment rates must double if the region expects to attain universal primary education by 2015.

HIV/Aids is aggravating attempts to achieve UPE, as more children have to abandon their studies to care for ailing parents, support orphaned siblings and run households. Aids is decreasing the opportunity for children to become educated. Less education deepens poverty, which in turn increases the vulnerability to infection. Studies by UNAids in 17 African countries show that receiving at least a primary school education can halve the risk of young people contracting HIV, even if they are never exposed to specific Aids-related programmes. UNAids predicts that by 2005 up to 20% of educators in sub-Saharan Africa will have died from

Aids and countless more will be infected or affected. Governments cannot afford to ignore the impact of Aids on education. When allocating more money to basic education, finance ministers need to increase expenditure for primary health care, Aids prevention and care.

Corruption robs children of their fundamental right to education. In some countries it is so widespread that it extends from the embezzlement of school funds to the buying of tertiary diplomas. To address corruption, departments, principals and school governing bodies must adopt a zero tolerance approach to corrupt practices.

Curriculum reform is urgently needed. Schools must teach more than reading and writing. They must empower people to become independent and critical thinkers. But in many sub-Saharan schools, pupils do not learn how to learn, solve problems or take initiative.

Africa can learn from East Asia. The East Asians revolutionised their education system through careful planning, financial commitment and by making education non-negotiable.

All these reforms will cost money and may appear impossible. It is therefore imperative that African governments and civil society employ new and creative methods to influence the developed world to follow through on their pledges. Governments also need to start doing more with existing resources in the event that the funding floodgates do not open. South Africa's former president Nelson Mandela sums it up best:

> Education is the great engine of personal development. It is through education that the daughter of a peasant can become a doctor, that a son of a mine worker can become the head of the mine, that the child of farm workers can become the president of a great nation.

Africa is at the bottom of the global pecking order on practically whatever index one uses. UPE, while noble and equitable, will simply not move Africa off its mediocre developmental trajectory. We face a skills gap that is much larger than the MDGs even suggest, and even if we achieve them, Africa will continue to lag behind its competitors. UPE alone is no quick fix.

The Tragedy of Education in Africa

Peroshni Govender[1]

Please consider the following statement and circle one of the options:

In sub-Saharan Africa, fewer than half of children of primary-school age go to school; enrolment in secondary school in 22 countries is below 20%; and less than 10% of the workforce has matriculated. These conditions ensure:

a) present and future economic competitiveness;

b) strong participatory democracy and nation-building;

c) an end to mass poverty; or

d) none of the above.

The answer is as obvious as the statistics are alarming. Education ought to lie at the core of Africa's development strategies, the primary means by which the continent works to catch up with the rest of the world in terms of stability, prosperity and prowess. As Carol Bellamy, executive director of the United Nations Children's Fund, notes, education may be the closest thing to a 'silver bullet' for the kind of acute developmental challenges Africa faces.

But it has not turned out that way. While the average child in South America can expect to attend more than 12 years of formal schooling, according to the United Nations Educational, Scientific, and Cultural Organisation (Unesco), a typical child in Niger or Burkina Faso enjoys no more than four years in the classroom.

In the four decades since African countries started to gain their independence from foreign rule, their education systems — with few exceptions — have been marked by inadequate teaching, lack of resources

[1] PEROSHNI GOVENDER is a researcher for the Nepad and Governance Project at the South African Institute of International Affairs (SAIIA), based at the University of the Witwatersrand, Johannesburg. This chapter expands on an article by Peroshni Govender and Peter Farlam that first appeared in *eAfrica: The electronic journal of governance and innovation*, in August 2004. See *www.saiia.org.za*.

such as textbooks and chalkboards, and colonial curricula and modes of instruction that often impeded the learning process.

Now, most African governments have pledged to meet the UN Millennium Development Goals, which include providing universal primary education by 2015. The idea is hard to argue with on paper, but there is growing evidence that such a narrow aim is having adverse consequences for broader education needs. And important questions about government commitment persist: While the global average annual state expenditure per child on primary education is $629, in Africa that figure is just $48.

'The problem with policy is not generating it, it is implementation and management', says Keith Lewin, an education specialist at Sussex University in Britain (see Chapter 3).

For a continent with the lowest levels of global competitiveness, the stakes are obvious. Across sub-Saharan Africa, only South Africa and Seychelles spend more than 1% of Gross National Product on science and technology research and development — and most economists consider even that too low to attract significant foreign investment or retain the most highly-skilled Africans. According to studies by Unesco, sub-Saharan Africa has less than 0.5% of the global scientific community.

Or consider this: A World Bank study of 65 countries released in June 2004 at a conference on women and higher education found that a country's GDP increases by 1% if the number of girls in school is doubled. Fertility and HIV/Aids infection rates also decline. But in sub-Saharan Africa, of the 42 million primary-aged children not in school, 62% are girls, according to the Forum for African Women Educationalists.

Neither the problem nor the outlook has changed significantly since 1999, when the British relief organisation Oxfam first published this conclusion in a study on education in Africa:

> Governments have failed to develop a coherent plan of action for mobilising the political will, popular involvement and financial resources needed to deliver on the promise of education for all. If the current inertia is not overcome ... the costs of such a failure for sub-Saharan Africa in terms of lost opportunities for poverty reduction and economic growth would be immense. It would signal the end of any realistic chance of the region achieving the human development targets set by the international community by 2015.

Literacy rates for sub-Saharan Africa, meanwhile, averaged 62% in 2001 compared with 89% in Latin America. While many countries claim to offer universal primary education, definitions vary widely. Many countries offer only two or three hours of instruction per day. Others, such as South Africa, offer six. The proportion of Africans living on less than $1 a day, meanwhile, now exceeds 60%.

The Millennium Development Goals, which include benchmarks for providing health care, sanitation and clean water and universal primary education, were meant to jolt listless governments and aid agencies into making tangible progress after years of stagnation.

But in key respects, evidence is starting to indicate, the MDGs have backfired by stifling a broader debate on education in Africa. Where schools once coped with one teacher for 50 students, many have more than 100 students per teacher. Hit by HIV/Aids and already inadequate teacher training colleges, many African countries — Tanzania, for instance — have made teachers out of high school graduates, often using those not good enough to move on to university. In Uganda, 17% of teachers have not been trained at all and 57% need to upgrade their qualifications.

The result? The quality of teaching has plummeted in many countries that have embraced universal primary education — the opposite of the intended effect. More damaging, the demands of such a provision have drawn funding and attention away from other crucial components of public education. In Malawi, for example, which committed in 1995 to providing universal primary education, 60% of the education spending goes to primary education, 30% to tertiary and only 10% to secondary.

The MDGs have opened a debate about government performance in meeting the needs of citizens, but all the evidence shows that governments need to take dramatic action to improve many aspects of education beyond the primary level. Despite the significant social benefits of increasing the number of primary-age children attending school, argues Jacob Bregman, a leading educationalist at the World Bank, secondary education is vital to development and economic growth (see Chapter 2).

Asia provides important lessons. Four decades ago, countries such as Singapore, South Korea and Malaysia were as poor as Ghana at its independence. Africa largely defined its problems in monetary terms and since the 1960s has received more than $1 trillion in aid and loans. Asia

looked in a different direction, concentrating on improving education in its formal school systems and helping businesses acquire technologies to make them more competitive (see Chapter 5).

Today, Asia thrives while Africa continues to lag far behind.

While many countries have plans to implement UPE, they lack the resources needed to institute far-reaching education reforms. And although the continent would need up to $2 billion, according to the Global Campaign For Education (GCE), to drive primary school enrolments – African governments need to stop being so reliant on donor aid. They need contingency plans which focus on how existing resources can be best utilised. Countries need to dispel the perception that throwing money at a problem will sort it out, instead, they need to prioritise, streamline education policies, introduce mechanisms for good governance and channel money in areas where there will be maximum effect.

Africa is increasingly marginalised in the world. Critically, the value of what Africa produces is steadily declining. To improve its economic posture, the continent needs a comprehensive solution to its education crisis, says Mamadou Ndoye, the executive secretary of the Association for Development of Education in Africa. 'When creating an education system, you need to look at what African societies are today and what we want them to be tomorrow', he says.

Based on conversations with a range of education specialists across the continent and further afield, here are ten neglected areas affecting education that African governments must address in order to create a more prosperous future.

HIV/Aids

Aids kills people in their prime, pushes families into poverty and wipes out knowledge that is essential to productivity and growth. The pandemic is aggravating Africa's attempts to achieve Universal Primary Education (UPE), as more children are having to abandon their studies to care for ailing parents, support orphaned siblings and run households and family farms.

A dangerous cycle is setting in: Aids is decreasing the opportunity for children to become educated, and less education deepens poverty, which

in turn increases the vulnerability to infection, according to a report by the Global Campaign for Education released in 2003.

Zimbabwe and Zambia, which once had close to universal enrolment, are experiencing sharp declines in learner participation as household incomes plummet and children take on increased domestic responsibilities due to the epidemic. Aids-related infertility, a declining birth rate and rising infection rates among children also lower enrolment rates, the report finds.

Falling incomes also force parents to withdraw pupils from school. This will result in more children growing up with too little education, who will be poorer, less productive, less nourished, more vulnerable to HIV/Aids and less likely to send their own children to school, Unicef (United Nations International Children's Fund) notes. This translates into a lower level of skills and knowledge in the population and will stifle the economy's capacity to develop and grow.

Studies by UNAids in 17 African countries show that receiving at least a primary school education can halve the risk of young people contracting HIV, even if they are never exposed to specific Aids-related education programmes. The more girls are educated, the longer they are likely to refrain from sexual activity and the more likely they are to require their partners to use condoms. The rationale is that educated women or girls make better-informed choices.

Therefore, getting every child into school and ensuring that they get at least a basic education becomes even more important. Unicef has found that in Ethiopia, Mali, Mozambique and Niger, the average adult has only one year of schooling — but children need at least six years of schooling before their education can achieve economic and development spin-offs.

Unless immediate action is taken, HIV/Aids could push governments further behind in their endeavour to improve educational levels in their countries.

It is therefore imperative that HIV/Aids be at the core of education policy and planning for both teachers and learners. The continent has an estimated 12.4 million Aids orphans and that figure is projected to rise rapidly.

Enabling those children to acquire an education requires a range of state interventions, including school feeding schemes, the removal of fees and the provision of financial incentives for parents to send their children, especially girls, to school. In Brazil and Nicaragua, for example, enrolment and completion rates increased measurably when governments gave money to poor families who sent their children to school.

As HIV/Aids continues to ravage the continent, stifling agriculture and killing the most productive members of society, millions of orphans are going to school hungry. School feeding schemes are therefore essential.

Nepad also recognises the importance of schooling feeding schemes and has embarked on 'Home Grown Feeding Programmes', which will see small scale farmers across Africa grow more crops to feed school children. Uganda and Ghana are the first countries to draw up clear plans for the execution of the scheme. The government of Ghana will expand its schooling feeding programme from 2005 to 2009 to cover about 2.5 million more pupils. Other countries also expected to roll out school nutrition programmes are Ethiopia, Mali, Nigeria and Senegal.

'If we could feed our children with some wholesome meals made from home-grown food and processed in our own countries', says Professor Wiseman Nkuhlu, chairman of the Nepad steering committee and head of the Nepad Secretariat, 'we would be providing 50 million children with adequate nourishment and we would be stimulating agricultural productivity.'

In Swaziland, a nutrition programme organised by Unicef and the World Food Programme showed that enrolment and attendance rates increased when children were given meals. Pilots started in five schools in 2002 have now been replicated at 460 sites serving 36,000 children. Similarly, studies in Malawi marked a 5% increase in enrolment and up to a 36% improvement in attendance among schools that run nutrition schemes.

While drives to expand UPE create a demand for more teachers, the Aids pandemic is ravaging a profession that is already in short supply. While it is speculative to assume that teachers are more vulnerable to Aids, global statistics indicate that the profession is in serious trouble.

UNAids predicts that by 2005, up to 20% of teachers in sub-Saharan Africa will have died from Aids and countless more will be infected.

This is expected to have disastrous effects, resulting in lost teaching time, even more overcrowded classrooms, and an overall negative impact on the quality of education imparted. It is also set to result in loss of valuable teaching time as educators take time off from work to attend funerals, care for ailing family members or are themselves too sick to come to school.

In Zimbabwe, an estimated 19% of male teachers and 29% of female teachers are HIV-positive, according to a 2002 UNAids report. In South Africa in 2001, Aids-related deaths rose by more than 40%. In Zambia, research funded by the British government's foreign development office, the Department for International Development (DFID), found the number of deaths among primary school teachers had risen from two per day in 1996 to four per day in 1998. This is equivalent to losing two-thirds of the country's cadre of newly-trained teachers per year.

Governments cannot afford to disregard the impact Aids will have on education, as the effects are only set to worsen. Therefore, when allocating more money towards basic education, finance ministers also need to increase expenditure for primary health care, Aids prevention and care.

Rich countries can also do their bit. G8 support to basic education is still less than it was in 1996. Only the Netherlands and Luxembourg are shouldering their share of UPE financing.

To curb and manage HIV rates among teachers, studies show, African governments should provide for more HIV testing as well as medical support, including anti-retroviral drugs for those who are infected; regular prevention programmes; and work-based counselling and support groups. Increased funding for teacher colleges is also necessary.

As the international development and relief organisation Oxfam notes:

> UPE is not a substitute for expanded HIV/Aids treatment and prevention. Both are complementary and urgently necessary to win the fight against the disease. In fact, expanding access to education without supporting an adequate treatment plan would be irrational and wasteful, particularly in countries that have a high or fast-growing prevalence rate, since the benefits of much of the education spending would be lost through early deaths. What is needed is both increased care and increased prevention. Developing countries need to be supported both to cope with HIV/Aids and to protect more people from contracting it.

Teacher quality and quantity

The provision of free public primary education has greatly increased the number of pupils and, therefore, the demand for teachers. This has compounded a longstanding problem: Africa needs to radically improve the quality of its teachers.

If Africa is to achieve UPE by 2015, Unesco predicts that it will need at least 3 million more teachers. According to the World Bank, it presently has about 2.5 million.

'Almost everywhere', says Adriaan Verspoor, an education researcher at the World Bank, 'large numbers of teachers have been recruited without professional training, lacking the skills necessary for good quality instruction'.

The problem must be tackled at five levels.

Firstly, the number of teachers produced has to increase. The profession needs to attract more recruits and increase places at teacher training colleges and universities. Governments need to make teaching more lucrative in order to attract some of the brightest school-leavers to the profession. Incentives can also help lure maths and science graduates to become teachers.

Secondly, improving the quality of education through enhancing teacher training programmes is as important as addressing the quality of education.

'Numerous studies have identified the quality of teaching as a major influence on pupil achievement', notes Albert Motivans of the Unesco Institute for Statistics (UIS).

He adds: 'Efforts to address the shortfall of teachers and to broaden the skills and future teaching forces must begin now, so that a well trained and effective teacher in every classroom is implicit in the goal of UPE.'

Education ministries must not employ teachers who have no qualifications but who have classroom experience or have undergone short training courses like parents or school-leavers. In Tanzania in 2004, high school graduates, who were not good enough for university and who passed a minimum of three subjects were recruited and trained for a month as junior secondary teachers. This attempt to reduce the demand

for more teachers can only have a negative impact on learning and outcomes.

Thirdly, countries must take a disciplined approach to retiring or upgrading the competencies of under or unqualified teachers.

An analysis by UIS on teacher training in sub-Saharan Africa two years ago found that overall teacher competencies in the region were low. For instance, 75% of the teachers in Benin are unqualified, in Angola at least 30% of teachers have not exceeded four years of schooling and in Cape Verde, only 5% of pre-school, 36.3% of primary and 58.6% of secondary school teachers had sufficient training. In Malawi 48.6% of primary teachers and 65% of secondary teachers are not qualified. Only 40% of Sierra Leone's primary and 55% of its secondary school teachers actually hold teaching qualifications. A third of Mozambique's teachers have not received any form of training and another and another third only reached the sixth grade, the study found.

Fourthly, governments have to urgently improve the competency of their teachers through on-the-job training. If teaching workshops are not feasible, school principals and senior teachers should monitor teachers in their classrooms and offer constructive advice on teaching technique.

Studies by the Association for the Development of Education in Africa (ADEA), the leading education think tank in Africa, stress the importance of school-based support for educators and the lead role of head teachers in changing the way teachers teach. To be effective in their work, teachers need the support of principals, the broader education system, parents and communities, Verspoor argues. But this requires education ministries to empower local school managers and demand performance from them.

Attracting skilled individuals and retaining them in the teaching profession is an essential pre-requisite for ensuring high-quality education in the future.

Fifthly, governments need to improve teachers' working conditions, which in turn will raise educational levels.

In classrooms across the continent, teachers are overworked and underpaid. Large class sizes and a lack of infrastructure and teaching materials are all part of a day's work. Under those circumstances, retaining the best qualified teachers is a difficult challenge.

Measuring results

Education can only be meaningful if pupils leave the schooling system with skills and competencies they can use in the working world.

At the least, primary school graduates should be able to read and write but this is not the case in many schools across the continent.

Delegates at a conference in Mauritius in December 2003, organised by ADEA, heard that less than a third of young Africans acquire the knowledge and skills necessary for the successful completion of primary school.

A paper presented by ADEA's education specialist, Adriaan Verspoor, for the conference notes: 'Poor quality instruction is very likely the strongest explanation for the failure of students to acquire the expected knowledge and skills and pass examinations'.

It is therefore only logical to state that improving quality requires evaluating outcomes — a basic principle in education that is often neglected in African education.

Three programmes that evaluate academic achievement in Africa — SACMEQ (Southern Africa), Pasec (Francophone Africa) and MLA (Sub-Saharan Africa) — indicate that about half of the pupils on the continent have not achieved the minimum level of skills as defined independently by the authorities in each country.

SACMEQ (the Southern and Eastern African Consortium for Monitoring Educational Quality), which measures literacy and numeracy in year six of primary school in Southern Africa, also indicates areas for improvement since it measures performance levels in specific fields of learning, which require particular cognitive skills.

Pasec is a French acronym, which translated means 'programme for the analysis of the education systems in Francophone countries'. Pasec's results show superior performance in Cameroon and Madagascar, with significantly lower scores in Senegal and Côte d'Ivoire. Pupils in Madagascar obtained higher scores because they were initially taught in a native language, Malagasy, before moving on to instruction in a foreign language.

MLA (Monitoring Learners Achievement) evaluates life skills in addition to literacy and numeracy in primary and secondary schools in all sub-Saharan countries.

According to Khadim Sylla, an education expert at the International Institute for Educational Planning at Unesco, these studies confirm 'the general observation of the low level of educational quality in Africa' and should become a routine part of educational stocktaking on the continent, together with more qualitative assessments.

Like its curricula, Africa's assessment methods are outdated. A paper presented by educationists Thomas Kellaghan and Vincent Greaney at the Mauritius conference found examinations 'both at primary and secondary level are limited to paper and pencil tests'.

They concluded that such testing:

- ignores a variety of areas of knowledge and skills often specified in curricula which cannot be measured by tests;
- places a high degree of emphasis on the achievement of cognitive skills, particularly for language and mathematics at the end of primary school and pays very little attention to the acquisition of practical skills;
- requires pupils to regurgitate what they have been taught, instead of applying their minds, drawing inferences or developing a logical sequence of steps to solve a problem or argue a case;
- contains very little reference to the everyday life of pupils outside of school. The tests deal mostly with scholastic topics and applications, rather than, for example, find out if pupils can use money in the marketplace or deal with health problems in the home; and
- is of a poor quality, with badly phrased questions, unsatisfactory alternatives in multiple choice tests, and vague scoring criteria.

Again, as with other challenges facing education in Africa, governments need to increase their budgets. Zambia is a good example of a country that reformed its education policies to improve the quality of education.

At independence, Zambia opted to teach all pupils in English. But in 1995, three decades later, the country found that literacy and numeracy levels were exceptionally low — almost three-quarters of pupils were functionally illiterate despite seven years of schooling. It was then decided

that schools would teach pupils to read and write in their mother tongue for three years, before switching to English as the medium of instruction. The idea was to lay the foundation for learning in a language that pupils understood and at the same time help children build a vocabulary and understand English, which would later become the language of instruction. Zambia has discovered that mother-tongue instruction dramatically improves literacy.

Three factors will improve educational quality:[2]

- Firstly, a relevant curriculum, 'one that connects learning to the child's experience and environment; responds to parental expectations and demands; and at the same time prepares students not for today's world but for a society as it will develop in the next 50 years'. The curriculum should also build on pupils' local cultures and environments, such as in Mali, Zambia and Burkina Faso, where the use of mother-tongue instruction is setting a solid foundation for further learning in foreign languages.
- Secondly, quality teachers are essential, as it is in the classroom that teaching is transformed into learning. Without a competent teacher, no curriculum can be implemented effectively and quality education will not be attained.
- Thirdly, efficient school-management policies. In most countries, education management is centralised and governments adopt a top-down approach. This often results in an inefficient application of resources, inequitable provision of access and unacceptable differences in the quality of instruction and learning achievement between the rich and poor, urban and rural.

Mathematics and science education

Maths[3] and science education is the key to unlocking the continent's economic and developmental stagnation. Africa lags behind in technology

[2] ADEA, *The Challenge of Learning: Improving the Quality of Basic Education in Sub-Saharan Africa*, December 2003.

[3] The author has used the South African convention of shortening the word 'mathematics' to 'maths'.

because of a gross shortage of maths and science graduates who can drive development.

'There is no time to waste', says Professor Fritz Hahne, the executive director at the African Institute for Mathematical Science in Cape Town, South Africa. 'Governments must make changes now. Technology is moving at pace and Africa cannot afford to be left behind.'

At the heart of the problem is the low level of maths and science education in classrooms across the continent.

Even in South Africa — the continent's technology leader — pupils regularly come in at the bottom of reputable international studies. The Third International Mathematics and Science Study Repeat in 1998 measured student performance in 41 countries across the world. South African pupils received an average score of 275 out of 800, well below the international average of 487 and lower than economic competitors such as Indonesia, Philippines, Chile and Malaysia.

A study by the Centre for Development and Enterprise in South Africa released in November 2004 found that although the number of pupils passing Grade 12 since 1999 had increased, 'the number of higher grade passes in maths and physical science was lower in 2002 than it was in 1991'.

In classrooms across Africa, the subjects are often taught by untrained teachers who themselves grapple with topics and who therefore impart lessons with a lack of imagination and insight to their pupils.

A World Bank study found that only 15% of Namibia's junior secondary and 50% of senior secondary science teachers were qualified. In South Africa, another World Bank study in six of the nine provinces showed that about 60% of the educators had not been trained in maths and science.

This creates a poor foundation and, too often, pupils shy away from pursuing these subjects at secondary schools. It is a sector that, across Africa, experiences acute shortages of trained teachers and financial constraints. World Bank education specialist Jacob Bregman notes that even at schools where science and maths are offered, the quality is questionable. 'Many secondary schools cannot offer biology, chemistry and physics separately due to a shortage of science teachers.'

This teacher shortage combined with a lack of equipment for scientific experiments, resources and curricula to which pupils can relate is a recipe for disaster. It is therefore no surprise that few pupils study the subjects and pass. Even fewer go on to university to pursue careers in science and technology.

To be globally competitive, African governments need to turn the tide and produce more graduates trained in maths, science and information and communication technology.

Japan, Europe and the US have two to five scientists and engineers per thousand people, according the UN Educational, Scientific, and Cultural Organisation. Most sub-Saharan African countries, on the other hand, have fewer than one in 10,000. Overall, the region accounts for less than 0.5% of the global scientific community.

Only 4% of university graduates study science in Ethiopia, 1% in Namibia, 11% in Eritrea, 18% in Madagascar, and 8% in Mauritius, according to Unesco. While training teachers and increasing spending at primary and secondary level are imperative, governments and universities must also create incentives for pupils to study science-related courses at tertiary level.

South African universities, for example, offer bridging courses and tutoring programmes for pupils interested in pursuing careers in science, maths or accounting fields who did not obtain Grade 12 results that would allow them university entrance. Students take the classes for a year and passing guarantees them entrance into their courses of choice the following year.

The University of Pretoria in the country's capital, for example, fully sponsors 140 black students in mathematics and the sciences every year. To help alleviate the high drop-out rate among ill-prepared first-year students, the university offers a 'foundation year programme' that gives intensive, practical instruction in chemistry, physics, biology, mathematics, computer literacy, English and study skills.

In East Africa, the Carnegie Corporation recently provided $4 million to Uganda's Makerere University and Tanzania's University of Dar es Salaam to boost the enrolment of women undergraduates, especially in science and technology.

Because science, engineering, architecture, health science and other technologically related courses are the most expensive, universities, governments and the private sector should look at subsidising costs.

South African Synthetic Oil (Sasol) does more than produce fuels from coal. The internationally recognised company is heavily investing in and encouraging young black pupils to become scientists.

'South Africa will not succeed in producing sufficient science, engineering and technology graduates to meet the needs of its manufacturing sector, schools, universities and research institutions unless the standard of teaching in those subjects is greatly improved, especially in traditionally black schools', says Sasol's John Colling.

Therefore, the international producer of chemicals, gases and lubricants has been financially supporting the upgrade of science teachers' schools in Sasolburg in the Free State and Secunda in Mpumalanga, two provinces where its factories are located. The company supports these schools by ensuring their teachers are trained and pupils have the facilities needed to achieve better results.

In its commitment to graduates, Sasol also runs bursary schemes for 450 school-leavers a year. Half of the bursaries are awarded through open competition and the rest go to people of colour, women and the physically handicapped.

Another problem is that Africa is quickly losing its skilled personnel to more lucrative positions and higher salaries in developed countries. It is therefore crucial that the brain drain be reversed. South Africa saw close to 17,000 skilled people leave the country between 1994 and 2001, according to a study by the Human Sciences Research Council (HSRC) in Pretoria. Most of them were engineers, architects, executive and managerial personnel, medical professionals and educationists.

'The brain drain has a damaging effect on a country's economy and a reduction in a nation's capacity to develop as a knowledge society and therefore compete effectively in a global economy', the HSRC study says.

Corruption

Corruption in education, through the embezzlement of much-needed funds intended for upgrading classrooms, producing textbooks and improving the overall standard of education, is directly robbing more Africans of their fundamental right to learn.

In Cameroon, for example, the situation is so dismal that most students cannot pass examinations without bribing teachers, according to a BBC news service report in June 2004. Corruption in the Cameroonian education system is also widespread and extends from the embezzlement of school fees to the buying of tertiary diplomas.

Even in South Africa, where the government prizes itself as transparent and legitimate, dishonesty and corruption are rearing their ugly heads. Every month, thousands of dollars that could be used to build more classrooms and to upgrade existing facilities and the competencies of under-qualified teachers are instead being paid out to ghost teachers – educators who draw salaries but who have not turned up for work in years (most of these are either teachers who have retired or taken voluntary retrenchment packages), or relatives of deceased teachers. In 2004, a senior district education manager in Gauteng province, Nomalizo Malefo, was dismissed after she was found guilty of tendering and procurement violations to the tune of $192,000.

In Kenya, principals have been accused of bribery, favouritism and stealing directly from schools. In an editorial to Kenya's nearly 4,000 principals in June 2004, the editors of the *East African Standard* lashed out at the 'petty corruption that permeates day-to-day transactions in schools'. Irregular admissions, private coaching during class time, collusion, impersonation and other forms of cheating during national exams are commonplace, the editors noted.

The selling of fraudulent diplomas has become a highly lucrative industry for officials of the Kenyan Ministry of Education, notes Ayesha Kajee of the South African Institute of International Affairs' Nepad and Governance Project.

Further research by Kajee in 2004 in Malawi reveals that the drive to expand universal primary education since 1994 has been wrought with underhanded dealings. She explains that when President Bakili Muluzi

came to power in that year, he introduced free and compulsory primary education. This necessitated the building of more schools, which were open to public tender. However, this process lacked legitimacy and contracts often went to members of the ruling United Democratic Front, who subsequently registered as building contractors.

'Although most of the schools were never built, and only the foundations for a few were laid, the contractors were paid for building the ghost schools,' Kajee says. In September 2000, an audit by the Malawian parliament's public accounts committee put the amount embezzled at about $2 million.

Summary of the main practices of corruption observed within the education sector, and their possible impact on access, quality, equity and ethics

Areas of planning/management involved	***Corrupt practices***	***Elements of education systems most affected***
Building of schools	Public tendering; embezzlement	Access; equity
Recruitment, promotion and appointment of teachers	Favouritism; nepotism; bribes and pay-offs	Quality
Conduct of teachers	Ghost teachers; bribes and pay-offs (for school entrants, for assessment of children, etc.)	Access; quality: equity; ethics
Supply and distribution of equipment, food and textbooks	Public tendering; embezzlement; by-passing of criteria	Equity
Allocation of specific allowances (compensatory measures, fellowships, subsidies to the private sector, etc.)	Selling of information; favouritism; nepotism; bribes and pay-offs; academic fraud	Equity; ethics

Source: International Institute of Educational Planning

To address corruption in education, departments, principals and school governing bodies need to adopt a zero tolerance approach. Political leaders also need to send a strong message that corruption at all levels of government is inadmissible.

Skills development and non-formal education

The Nepad 2004 document on education states that Africa's further education institutions are producing inadequate numbers of skilled personnel, inferior skills relative to the quality required, and skills that do not match the needs of the job market.

Therefore, now more than ever, high school curricula need to change to include some level of technical or vocational training that pupils can use at the end of their schooling or further explore and define at tertiary level.

But because technical subjects are more expensive, they are sorely neglected in Africa's cash-strapped secondary education sector. And in countries where technical education is being offered, it is being implemented without proper planning or resource allocation.

Kenya and Ghana are prime examples. There, the governments introduced vocational education 'suddenly with little preparation and ... financing for the implementation has been dramatically inadequate', notes World Bank education consultant Jon Lauglo.

Lauglo's paper presented to delegates at a secondary education conference in Dakar, Senegal in June 2004 explained that in 1986, the Kenyan government introduced a compulsory policy that compelled parents to meet the costs of setting up workshops and procuring equipment for vocational education.

In Ghana, as well, vocational education was expanded without increasing financial support. 'The assumption was that somehow local resources would be found for equipment and supplies when the subjects were introduced and no extra allocations were made to finance them.'

The quality of education in both countries suffered, Lauglo explained. In Kenya, the government had to rethink its policies and, in 2002, because of the inability to fund and teach them properly, many technical subjects had to be withdrawn from the curriculum.

Vocational subjects are not only more expensive than academic subjects, they also require more specialised equipment, highly trained teachers, tools, facilities, machinery and consumables. The subject matter must be continuously updated to include the trends and advances in industries. An unimaginative and archaic curriculum will do little to capture pupils' imagination, meet the requirements of the job market, or empower pupils with employable skills.

Developing a relevant curriculum that responds to the needs of society is at the heart of South Africa's newly revamped Further Education and Training (FET) colleges. The colleges, which were born through mergers with former technical high schools and tertiary institutions, aim to provide cutting-edge vocational education to junior and high school pupils. Evening classes are offered to adults.

In an attempt to reduce the country's unemployment rate, which according to Statistics South Africa stood at a staggering 27.8% in March 2004, the FET colleges' work is relevant and at the forefront of the latest knowledge. Each institution partners with the role-players in industry, who are instrumental in devising the curriculum for specific fields. Partnerships also facilitate on-the-job-training opportunities for parts of the academic year. The negative repercussions of the South African model are yet to be seen as the policy is only in its first year.

But not all pupils who graduate from primary school enter secondary and complete it. It is a reality that more than 90% of pupils drop out, therefore creating a need to address Africa's serious illiteracy problems.

For a long time, non-formal education (NFE) has been considered as second-rate, intended for a specific rural population. However, because of its contribution to reducing illiteracy, NFE cannot be ignored due to its economic and developmental benefits. This type of education is any education and training activity structured and organised outside of school and intended for any person wishing to receive specific training outside the formal school environment.

Education and training are undoubtedly sound investments for any country and its economy. Governments must therefore do more to encourage vocational training, offering incentives for companies and parastatals to train staff through formal courses and apprenticeships. They must fund literacy and skills training aimed at adults, and change

regulations and incentives so that the for-profit education sector may flourish.

This also means that governments and businesses ought to collaborate to identify skills shortages in the market and to design programmes and incentives to address them.

Why are skills development programmes necessary?[4]

- Technological change and the increased competition flowing from trade liberalisation require higher skills and productivity among workers;
- Skilled workers are more readily available to adapt existing knowledge and processes;
- Investing in the productivity and skills of people raises income and reduces poverty;
- HIV/Aids is depleting human capital and magnifies the need to replace skills lost across a wide range of occupations and is driving the cost of labour.

Strengthening secondary education

As UPE drives increase, more youngsters are knocking on the doors of high schools, only to be turned away because educational opportunities beyond primary school are limited.

Few primary school graduates — 25% according to World Bank predictions — enrol at secondary schools where, in most cases, the conditions are appalling, and only about 10% complete their education.

But as the number of primary school graduates continues to rise, this places pressure on governments to create more places in secondary schools, and for the quality of education to be improved.

Africa's high school sector has a notorious reputation for poor quality education: teachers are unqualified, schools lack resources and

[4] Johanson RK & AA Adams, *Skills Development in Sub-Saharan Africa*. Washington DC: World Bank, 2004.

infrastructure, curricula and textbooks are outdated, and classrooms are overcrowded.

While primary school lays the foundation for learning, high school is where pupils acquire the skills needed to secure jobs and therefore deliver real benefits to national economies. Therefore, a growth in the secondary education sector is essential as it is the only remedy for the continent's developmental and economic woes.

'Even good primary schooling is no recipe for Africa's success', notes Professor Keith Lewin, an educationist from the University of Sussex. 'The obvious strategy, if countries want value for money, is to invest in secondary education.'

But many African countries are embracing UPE without preparation and foresight.

Uganda is a typical example. Although the programme had been running for seven years, fewer than half of the 700,000 primary school graduates in 2003 could be accommodated at secondary school.

The failure to create educational opportunities beyond the primary level will not only cancel out efforts to educate the continent through UPE drives, it will also result in a decrease in enrolments at primary level, experts from the World Bank and Unesco believe.

They predict that a lack of educational opportunities beyond primary will discourage parents from enrolling children at school and primary school pupils from completing their schooling.

Francois Caillods from the International Institute for Education Planning notes, 'Countries that have experienced the highest level of economic growth in the past decade had all substantially invested in secondary education a number of years before, as countries in east and south-east Asia illustrate'.

But the emphasis on UPE has contributed to the gross neglect of secondary education. Lewin argues that most education budgets in sub-Saharan Africa favour primary and tertiary education, with secondary receiving the smallest slice.

'If the present cost structures continue to prevail, most countries will face acute problems in financing the expansion', Caillods says. With the

present cost structure, a secondary gross enrolment rate of 60% is nearly beyond the reach of all sub-Saharan countries within the next 15 years.

An expansion of secondary education will be more costly than universal primary. In countries where high schools are well developed, it can cost an average of 1.3 times more than primary education, notes Caillods. But in poor regions such as sub-Saharan Africa, where the sector is not adequately developed, it can cost 3.5 times more than primary school.

Central to the expansion of secondary schooling is the quality of education. Curricula need to be revised and made more relevant to pupils and high school needs to start preparing pupils for the world of work or further education. For pupils to be equipped with employable skills, the curriculum must be designed to include a technical and vocational component that is in tune with the demands of industry.

Access cannot be expanded, Lewin says, 'without major changes in the way education services are delivered. Therefore, sub-Saharan countries are searching for financially sustainable strategies for expanding access to those currently out of school as well as to lower unit costs for those enrolled'.

Some of the strategies he says countries are employing include:

- ***redefining the private education sector's role and relationship with governments***. For example countries are experimenting with targeted financing mechanisms such as providing government subsidies for more pupils to go to private schools in Lesotho or matching grants in Botswana and Tanzania;
- ***altering the structure of the education system***. Another strategy to reduce the cost of secondary education is to re-examine the structure of secondary schooling and how it is segmented into more and less specialised cycles. An ongoing study by the World Bank on Secondary Education in Africa (SEIA) is investigating efficiency gains when lower secondary is integrated into primary schooling or lower secondary into upper secondary education;
- ***alternative modes of education delivery*** such as the internet or radio, which use peer learning and distance methods, could also reduce unit costs; and

- ***improving internal efficiency*** by lowering the high drop-out and repetition rates can also reduce costs.

Curriculum reform

Schools have to do more than teach reading, writing and arithmetic — pupils need to be educated to become independent and critical thinkers. The curriculum is the tool to achieve this objective and should be designed in such a way that what is learned in one grade forms the step for what can be reached at the next.

'One of the criticisms levelled against African schools is that pupils do not learn how to learn, nor how to be problem-solvers or take initiatives. These strategies should be taught in schools,' says a report by ADEA.

Also, in most African countries, the subject matter is archaic, having not been revised since colonialism. Pupils are taught by rote and many by unimaginative untrained teachers who struggle to bring lessons to life.

While some countries have 'Africanised' their curricula by giving preference to indigenous languages and cultures, the actual changes to the subject matter are minimal. As Geoffrey Tambulukani, a language and education expert from the University of Zambia explains, improving curricula is tedious and costly, and is too expensive for poor African countries that rely on donor aid for educational reform. 'Donor aid for education is often earmarked for specific projects and, unfortunately, curriculum reform is not one of them'.

Therefore, he says, countries should lobby for aid funding specifically earmarked for curriculum development.

A reformed curriculum involves producing new material and textbooks, which is a costly affair. Nepad's 2004 education recommendations suggest regional co-operation between countries and the possible standardisation of textbooks and other training materials in maths and science as an attempt to reduce costs.

South Africa is an example of a country that has instituted successful curriculum reform — totally shedding its former apartheid-era syllabus and introducing the European-styled Outcomes Based Education (OBE).

This approach is learner-centred and goes beyond the conventional realm of the chalk-and-talk teacher-dominated approach to education that is prevalent in neighbouring countries. Central to the OBE concept is encouraging pupils to think for themselves and participate in lessons. Education is also not purely about academics: pupils are taught financial and artistic skills they can use in every day life.

Curricula have the added obligations of preparing pupils for the world of work or to set the foundation for further education. This is particularly vital at secondary level.

Therefore, Bregman says that the 'role and goal of secondary education needs to change: from the current out-of-date and highly inefficient, exclusively academic (university) preparation to a self-standing and world-of-work preparatory cycle'.

At the second conference on secondary education in Africa held in Senegal in June 2004, a broad consensus emerged that secondary school pupils should learn skills needed to drive the economy. More vocational and technical schools, driven by the needs of the private sector, are required. Business should also be more involved in such schools and steer their curricula, so that what is taught is relevant and meets the demands of industry.

But curriculum changes can only be meaningful and work if educators understand the subject matter, have the necessary teaching tools, lesson plans and are qualified to apply the new teaching techniques.

HIV/Aids education is an example. Soaring infection rates have necessitated that countries include Aids education in the curriculum but it is yet to make a difference. Research by the United Kingdom's Department for International Development found that HIV/Aids education made little impact on Botswana, Malawi and Uganda because teachers lacked the training and commitment to integrate the topic into the mainstream curriculum

Teacher salaries

Africa's shortage of teachers will increase as more pupils are enrolled into primary and secondary schools. But recruiting and retaining the best and

brightest school-leavers to the profession remains a challenge to many countries given that the pay is poor.

And although teaching is one of the lowest paid professions on the continent it is ironic that the biggest chunk, about two-thirds, of most countries' education budgets goes towards salaries.

Be that as it may, African teachers are among the worst paid educators in the world.

A starting salary in Malawi, for example, can range from $27 to $127 a month and in Tanzania from $70 and $97, depending on qualifications. In Sào Tomé, teachers can expect between $60 and $120 and Kenyan teachers take home between $54 and $133, according to the Unesco Institute of Statistics (UIS). In Rwanda, salaries set in 1985 did not change for 11 years despite social upheavals and the cost of living. Only in 1996 did teachers get a salary hike when a general increase of 20% was awarded to all public servants.

But in developed countries, teachers take home an average of $2,293 a month. A 2002 report by Unesco and the International Labour Organisation (ILO) found that among the countries belonging to the Organisation for Economic Development and Co-operation (OECD), Swiss teachers were the highest paid, taking home about $43,627 a year.

In Botswana, one of the richer African countries, teacher salaries have declined in real terms between 1970 and 2000, says Lisenda Lisenda of the Botswana Institute of Development Policy Analysis. Three decades ago, research showed, a senior civil servant earned on average three times more than a teacher. Now, civil servants earn on average 13 times more than teachers.

Not only are teachers in Africa poorly paid; many are lucky if they actually receive a salary cheque on time.

John Lewis of the South African Democratic Teachers' Union says,

> It is widely acknowledged that African teachers are poorly paid and sometimes don't even get paid for months. The profession does not pay and has also lost its status in many countries, and it is no surprise that graduates then opt to pursue other careers where they can make more money.

This situation of low salaries for educators in Africa hinders the recruitment of teachers and makes retaining good teachers difficult. Highly

competent teachers often leave the profession for more lucrative and better paying positions and many school-leavers choose the profession for a lack of anything better. This not only weakens the teaching fraternity but it also has a negative impact on the quality of education imparted.

Therefore, countries need urgently to increase their national education budgets, remembering that increases in primary enrolments create a need for more teachers, which will inevitably demand bigger budgets for teacher salaries.

When governments decide on their budgets, they need to make trade-offs between factors such as the level of teachers' salaries, the size of classes, the number of teaching hours required of educators and the intended instruction time for pupils.

An analysis of World Education Indicators (WEI) for 2001 by the OECD and Unesco found that some developing countries increased the 'competitiveness' of teachers' salaries according to teacher-pupil ratios.

For instance, a lower-than-average teaching load was compensated by larger class sizes. In Chile, the Philippines and Thailand, primary school educators are paid higher salaries but have to endure more than the average teaching hours or bigger classes. But in Indonesia, lower salaries and smaller classes offset a higher number of teaching hours.

While uniform salary scales are transparent and easy to administer, they do not help motivate teachers to perform at their best, nor do they help solve the problem of shortages of teachers in certain subjects or rural areas. As Bregman points out, it is important to offer educators incentives.

Education departments should look at offering rewards or incentives to educators who undertake more hours, teach difficult subjects like maths and science or who volunteer to go to rural areas where there are shortages of schools and skilled teachers.

On a continent known for bribery and corruption, the payment of bonuses must be carried out carefully and fairly. If administered incorrectly, this could have a negative impact, which impairs school effectiveness. An unbalanced system may also lead to poor morale among teachers, difficulties in recruiting qualified staff and an exodus from the profession.

Educating girls

Education is a fundamental right for all children, but in many African countries there is an overwhelming absence of girls in classrooms.

And despite targets set by the international community to ensure gender equity and raise the participation of girls in education by 2005, Unicef estimated that some 24 million or 60% of girls in sub-Saharan Africa were not in school in 2002.

Unless female participation in education is increased, it is likely to hinder economic growth and impede development. There is a growing body of evidence, especially from Unicef, which indicates that educating girls will help reduce soaring HIV/Aids levels. In sub-Saharan Africa, 58% of those carrying the HI virus are women, and girls are twice as likely as boys to become infected. The ratio is 'five or six (females) to one (male) in the worst affected areas', a 2004 report says. The report adds,

> Education helps women become better informed about how to prevent HIV infections. It empowers them to defend themselves in potentially dangerous situations ... denying a girl access to quality education increases her vulnerability. Girls, more than boys, are at greater risk of such abuse when they are not in school. A classroom not only provides a safe haven for girls, it can instil in them a sense of their own power and hope for the future.

Boosting female enrolments also reduces child and maternal mortality and uneducated girls are not only at a greater risk of contracting HIV/Aids, they are also more vulnerable to sexual exploitation and trafficking. A new study by the US Council on Foreign Relations has found that:

> A single year of primary education correlates with a 10-20% increase in women's wages in later life. Academic studies find the return on a year of secondary education is even higher — in the 15-25% range; an extra year of a woman's education has been shown to reduce the risk that her children will die in infancy by 5% to 10%.

And although Nepad and African governments have committed to the Millennium Development Goals and are racing to achieve universal primary education in time for the 2015 deadline, most governments are neglecting their immediate target of balancing the number of girls and boys by 2005.

'Governments realise girls education is important but their policies to tackle it are usually inadequate,' says research on nine sub-Saharan states by Professor Christopher Colclough from the University of Sussex.

Countries also fail to translate their commitment into budgetary allocations.

The Global Campaign for Education's 2003 'A Fair Chance, Attaining Gender Equity by 2005' report concludes that the female enrolment rate will have to be doubled if the region expects to attain universal primary education by 2015. Grade 1 intakes in Ethiopia and Mali need to increase by 60%, in Togo by 62% and in Niger by 63%. In French-speaking countries, where gender imbalances are the most acute, enrolments should rise by 200%, the report says.

In Ethiopia, where women are regarded as inferior, the 2003 world champion for the 10,000m Ethiopian Berhane Adere is working towards dispelling such mindsets. As Unicef's goodwill ambassador for girls' education, she is working to convince parents that educating their daughters is just as important as educating their sons.

In many countries, the high cost of education is one barrier girls face. Reducing or waiving school fees and the hidden costs of uniforms, textbooks, stationery and transport are some ways to increase enrolments.

India is making progress in this regard by giving pupils uniforms, a midday meal and wheat rations to take home. Bangladesh has introduced the Food for Education programme through which, in return for food parcels, parents have to guarantee their children will attend class for at least 75% of the year.

Barriers to educating girls[5]

- Family poverty. Sending children to school can cut income or help at home.
- Schools may charge fees or require uniforms that parents cannot afford.
- Many poor parents, when forced to choose, view educating their sons rather than their daughters, as a long-term investment.
- Unicef estimates that 50 million children worldwide are not registered at birth, and the majority of them are female. In many countries, the lack of a birth certificate can prevent admission or block eligibility to take examinations.
- If children have far to travel to school, parents are less likely to allow their daughters to make the journey because of risks to their personal safety.
- Evidence has shown that girls are more likely to be victims of sexual and physical violence, such as rape, at schools than boys.

Bangladesh is a country whose government, under pressure from women's groups, has taken decisive action on gender equity.[6] Primary education was made compulsory in 1990, fees for rural girls were abolished and food for education and stipend schemes were later introduced. Government spending on education also increased.

The government embarked on what it called a Campaign for Social Mobilisation for Basic Education in 1992 and used multi-media techniques, including a cartoon character called Meena to highlight the importance of education for poor girls.

The mid 1990s saw satellite schools spring up for Grade 1 and 2, fee-free education for girls was extended to Class 10, the Female Secondary Stipend Programme was extended and a number of other incentives were offered to girls and poor children in primary school.

Since the 1990s, Bangladesh has consistently allocated about 46% of its education spending to primary education. The country's efforts to promote access and equity have resulted in extraordinary gains in girls' enrolments in both primary and secondary schools over the past decade.

[5] Unicef, *Educating Girls: The Big Picture*. New York: Unicef, 2004.

[6] The Global Campaign for Education, *'A fair chance: Attaining gender equity by 2005'*, 2003.

What's Next? Coping with Successful Primary Education For All

Secondary Education in Africa (SEIA): Engine for Economic and Social Growth

Jacob Bregman & Geraldine Simonnet[1]

This article examines some of the issues surrounding the gradual achievement of Universal Primary Education (UPE) or Education For All (EFA) and provides arguments for a better recognition among senior policy-makers and international donors that 'there should be life after primary EFA'. This makes the question 'What's next?' more relevant for Africa's EFA debate. How good is the quality and relevance of what is taught and learned at primary and junior secondary levels? How does Africa compare internationally with, for example, Asia and Latin America? As investment in African education increases and expansion is planned, there should be better guarantees on the quality and relevance of graduate output. What will society get in return? Good quality and relevant basic education contributes to social and economic growth. What we do not know is whether today's primary and junior secondary graduates in Africa can compete with those from other parts of the world. This will bring us to analysing the examination and assessment practices in Africa. It will require debate between African and international educators and stakeholders. Can there be better junior secondary education in Africa after decades of neglect by donors and governments? If so, which curricula considerations should be taken into account?

Africa's primary EFA ship is cruising along and governments and donors are paddling ferociously. But where are we going and what will be on the other side? As one set of challenges is being solved through the international community's efforts to achieve primary EFA and the Millennium Development Goals (MDGs) throughout the world, another

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equally large task is being created. In sub-Saharan Africa, the demand for junior and senior secondary education is increasing rapidly. The current completion rates for junior and senior secondary education in Africa are only about 15–25% of the relevant age groups (see Box 1).

Box 1: Demand for secondary schooling increasing[2]

There are about 86 million children of secondary school age in sub-Saharan Africa. About 23 million are in school. Most of the 63 million that are excluded are concentrated in the larger, poorer countries, with 19 countries accounting for 87% of the total. Four countries — Nigeria, Ethiopia, the Democratic Republic of Congo and Tanzania — account for 46% of the total. The average GDP/capita of the 19 countries is below $400. The secondary Gross Enrolment Rate is below 20% in 15 countries, and below 50% in 37. Niger, Burkina Faso, Tanzania, Burundi, Chad, the Central African Republic, Mozambique, Madagascar, and Rwanda stand out as having the lowest GER2s. The high-enrolment-rate countries are Namibia, Cape Verde, Botswana, Mauritius, South Africa and the Seychelles, which all have GER2s of 80% or more and an average GDP/capita of over $3,500. In sub-Saharan Africa, probably fewer than 20% of the children complete secondary schooling. Secondary enrolment in other parts of the developing world is much higher — 52% in South Asia; 65% in East Asia and the Pacific; 60% in Arab States and North Africa; and 80% in Latin America and the Caribbean. While many sub-Saharan African countries are closing the gap in primary enrolment rates, the gap at secondary level remains wide and is growing.

Policy on secondary education in Africa is increasingly being recognised as an area of neglect. In both the first and second regional conferences on Secondary Education in Africa (SEIA), representatives from sub-Saharan African countries drew attention to the need to address the consequences of EFA constructively and respond to the increasing pressure on access to secondary schooling. Without new policy, social exclusion will grow, and the Millennium Development Goals (MDGs) will be missed.

[2] Professor Keith Lewin, University of Sussex, presentation at the SEIA donor workshop in Amsterdam, organised by the Vrije Universiteit Amsterdam and the World Bank's Africa SEIA core team, Netherlands, October 2004.

There are four main reasons for investing in secondary education in sub-Saharan Africa. First, secondary education is crucial for economic growth. Globalisation, the increasing importance of information and communication technology in the twenty-first century, and rapid technological change have made knowledge a critical determinant of competitiveness in the world economy. Secondary education provides countries with the critical higher level skills and knowledge needed for economic growth, including further learning and the training of professionals such as technicians, scientists, and entrepreneurs.[3]

Second, secondary education plays a crucial role in the socialisation of young people and in targeting youth-at-risk. The age group in secondary education demonstrates the greatest capacity to change behaviour.[4] Secondary education plays a decisive role in fostering positive social attitudes, civic values, and in fighting against drug abuse and diseases such as HIV/Aids and malaria.

Third, secondary education yields considerable private returns. It provides the opportunity to acquire attitudes, skills, and competencies that are unlikely to be developed over the primary grades. These skills enable youths to develop job-oriented skills, participate fully in their society, take control of their own lives, and continue learning.[5]

Fourth, the demand for secondary education, especially at lower secondary level, is increasing rapidly. The dependency ratio, the number in the economically 'non-active' to 'active' population, in sub-Saharan Africa is the highest[6] in the world.

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[3] Fouché B, 'Towards the development of an equitable African information society', *African Development Review,* 10 June/July 1998, pp.134–149.

[4] UNAids, *HIV/AIDS and the Education Sector*. Programme Co-ordinating Board. 11 April 2000, Geneva.

[5] Lewin K & F Caillods, *Financing Secondary Education in Developing Countries: Strategies for Sustainable Growth*. Unesco/IIEP, Paris, 2001.

[6] The sub-Saharan African youth dependency ratio is determined by the high proportion of people under 20 years of age (in many countries it is around 40–50%).

Box 2: Africa's secondary education — A reason for concern[7]

We are living in a complex and contradictory world, marked by rapid, deep-going transformations. The scientific and technological revolution no longer means occasional or periodic upheaval, for it has become a constant human activity process. Every day it propels new discoveries and breathtaking progress in all spheres of human activity: economic, social, cultural and political. One consequence of all this, a major feature of our times, is the hegemony of intellectual capital.

Yet all this today depends on the stock, the level and the quality of the education and training that each country is able to provide the current and future generations of its citizens. I am convinced that basic education for all is still indisputably a priority for Africa. Nevertheless, the very fact that it is still a priority calls strongly for increased attention and greater efforts with regard to other levels of the system, as part of a comprehensive, balanced approach to the development of education.

From this perspective, secondary education is a leading concern for several reasons, only a few of which will I mention here. First, basic education is increasingly viewed with a vision that would extend compulsory schooling to the age of 16, thus including the first cycle of secondary education. Second, the progress made towards universal primary education directly results in greater pressure on secondary education and heightened demand from pupils and their families in both quantitative and qualitative terms. A third reason is that the continually increasing complexity of human existence and the world of work, spurred along by the information society and our knowledge-based economy, demand a level of preparation for young Africans that goes far beyond five or six years of primary education.

This is why we advocate a significant expansion of access to secondary education. The African governments and their development partners, the international community and the funding agencies, urgently need to provide proper responses to this need, or else risk breakdowns and inadequacies that will create social and political tensions and conflicts that will prove increasingly difficult to handle.

[7] Mamadou Ndoye, executive secretary of the Association for the Development of Education in Africa (ADEA), first SEIA regional conference in Kampala, Uganda, June 2003.

It is well known that economic and social development requires a critical mass of skilled labour with relevant key competencies. Primary education remains a priority for all sub-Saharan African governments, but, at the same time, pressure (social, political and economic) is building up for increased access to junior and senior secondary education cycles. Improved communication, regional and international exchanges of trade and information, and the higher aspirations of Africa's youth all make for a powerful and dangerous mix if governments will not be able to respond adequately.

The responsibility for a proper response to build improved (junior) secondary education access also lies with the international donor community, which has so far remained relatively cool to the idea that there should be donor responsibility for 'life after primary completion' in Africa. In social terms, there are huge pay-offs for better access to quality (junior) secondary education. Citizens who have completed 'basic education'[8] have fewer children, lead healthier lifestyles, ensure their own children go to school, and are better able to contribute to the economic development of their countries. A completed basic education also can reduce the spread of HIV/Aids and other (sexually-transmitted) diseases. Many of these gains cannot be achieved with only primary education (of often weak quality). And African countries face the pressure of a growing number of primary education graduates with higher expectations for further learning and insufficient opportunities. This is particularly true for children of the poorest families.

Today, only about 25 million children of the secondary age group out of the total of about 90 million[9] in Africa are in (junior) secondary school. In both primary and junior-secondary cycles in Africa, significant quality, equity and efficiency problems remain.

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[8] We use the Organisation for Economic Co-operation and Development's definition of basic education: nine years of completed schooling with a graduate profile that follows international quality trends and satisfies the need for local knowledge and relevance. In most middle- and higher-income countries, compulsory and free education covers the age group from five to 16 years.

[9] This is according to the Unesco Institute of Statistics (UIS) and the World Bank Africa Region SEIA's latest data.

Box 3: Chile changes curricula[10]

The key decision regarding curricular structures of secondary education is about the boundaries (curricular, temporal, institutional, etc) that establish a differentiation between general and vocational education.

In Chile, as a result of the reform of the curriculum of secondary education (1998–2002), the difference between the two modes of secondary education was narrowed, from four to two years. The grade in which the curriculum became differentiated was postponed, from Grade 9 to Grade 11 (or from 14 to 16 years of age). In the first two years of secondary education (grades 9 and 10), the new structure contains a common curriculum of general education, independently of whether a student attends an academic (general) or vocational educational institution. Thus, all students in the country share a common educational experience until Grade 10 (prior to the reform, the common curriculum ended with primary education, or Grade 8).

During the final two years of secondary education (grades 11 and 12), in both the academic and vocational strands, the curricula combine general education with specialised education. In the academic mode, approximately two-thirds of the time is spent on general education, including nine traditional curricular areas: language, maths, history and social sciences, philosophy and psychology, science, technology, physical education, art and religion. Conversely, in the vocational strand about two-thirds of the time is devoted to specialised education.

What is, for example, the graduate profile of primary and junior-secondary school-leavers in sub-Saharan African countries? Is this profile what society and enterprises need? Do school-leavers have the required and adequate skills and competencies? Are basic education curricula changing with the changing times? In general, the answer is that there is more we don't know than what we know. We do know that most curricula for junior secondary in Anglophone and Francophone sub-Saharan African countries have not changed significantly over the past decades, and that at secondary level the curricula continue to be subservient to the academic

[10] Cox C, 'Organising curriculum reform in secondary education: Clues from Latin America'. Paper presented at the second SEIA regional conference in Dakar, Senegal, 6–9 June 2004.

selection process for the small chance that a student will enter university. This produces systems characterised by a large number of failures rather than successful completers. It should be noted that sub-Saharan African countries can no longer afford these kinds of practices. They stand in the way of expansion.

Box 4: Contents and focus of subjects in Chile[11]

Regarding the foci of changes within the school subjects, the reform included changes in *orientation and content*, according to three criteria:

- changing from an emphasis on contents to an emphasis on skills or competencies;
- updating and enriching subjects, or requiring higher standards of achievement in them; and
- ensuring meaning or relevance of the curriculum in terms of pursuing connections to students' lives.

Given the needs of an information- and knowledge-intensive society, the skills emphasised by the new curriculum include the ability for abstraction, systemic thought, experimentation and learning to learn, communication and co-operative work, problem resolution, managing uncertainty and adapting to change. The new curriculum also promotes the development of civic habits and attitudes built upon the unquestionable value of democracy and human rights.

Improving internal efficiency will free up resources for expansion. Money saved through efficiency gains should be applied back into the schools and classrooms to enhance quality and relevance. Governments should use international trends as a yardstick for what education systems should deliver. For example, roughly the Organisation for Economic Co-operation and Development (OECD) countries allocate between 5–8% of Gross Domestic Product (GDP) to their education sectors (public and private). Allocation to public schools is about 12–16% of the total public budget and the recurrent public salary bill is about 18–22% of the total

[11] Cox C, *op. cit.*

public wage bill. This money delivers roughly universal basic education completion (the five- to 16-year age group) of reasonable quality and relevance, up to 80% completion of the senior-secondary cycle, including technical and vocational education and (general, pre-job) training.

In many low-income countries, current spending levels (3–4% of GDP and relatively high public wage bills) deliver only about 60% or less completion of basic education, less than 25% completion of senior secondary and less than 1–2% enrolment in higher education. In addition, many of the indirect costs and private family contributions are not included in these calculations. In addition, the provision of good-quality teaching and student textbook materials as well as the school environment leaves much to be desired.

Anybody can do the maths on the sustainability of expansion using the current unit costs in sub-Saharan Africa. It will just not be possible without major improvements in efficiency (reducing repetition rates, increasing completion rates, improving teacher management, better using infrastructure through double shifting in urban areas, and slimming down the bureaucracy in central ministries). What is it that the current education systems deliver for the public resources allocated to them? On which sustainable basis can these systems be expanded to reach universal primary and a reasonable (40–60%) junior secondary coverage in the next 10–15 years? These are questions that involve politicians as well as senior technicians.

Current completion rates for junior and senior secondary education in Africa are only about 15–25% of the relevant age groups, and over 50% of the population is under the age of 20. Poverty and a lack of education opportunities increase the risk of HIV/Aids, conflict and war. To combat poverty, fight HIV/Aids and get sustainable economic and social growth,[12] Africa needs a critical mass of skilled youth with the relevant key competencies.

[12] Investment in secondary education yields considerable social and private returns. See Bregman J, 'Summary of secondary education reforms trends in OECD countries with an Africa perspective'. Paper presented at the first SEIA regional conference in Uganda, June 2003. Also at *http://www.worldbank.org/afr/seia*.

Box 5: To expand secondary education, developing countries need to:[13]

- increase government resources.
- reduce the unit costs of schooling without changing the content or form currently prevailing in the two cycles of secondary education.
- modify the content and/or the form of secondary education. This would be useful particularly for lower secondary, which could gradually be integrated in a basic education cycle covering nine or ten years.
- change the financing structure for secondary educational services; that might work for the two cycles, but possibly under different modalities. For the first cycle, the role of communities could be taken into account, while for the second cycle the role of private education could be studied. At the upper secondary level, increased private financing could help regulate student flows to keep them in line with the demand for educated workers on the part of national economies.

For example, under the current conditions, it may be a cost-efficient and strategically desirable policy to expand the primary cycle, at least in low-income countries where this cycle is only five years (Madagascar), and/or to seek a better linkage of the junior secondary with the primary cycle, so that a more seamless basic education track will emerge. However, most sub-Saharan African countries have not started this debate. The donor workshop[14] in Amsterdam in October 2004, organised by the Vrije Universiteit and the SEIA core team (see Box 3) from the World Bank's Africa Region, was the first meeting where realistic projections were discussed and some discussions took place over what it means to establish sustainable expansion of primary as well as junior secondary education in lower-income countries in sub-Saharan Africa.

[13] Mingat A, 'Issues of the financial sustainability in the development of secondary education in Africa'. Paper presented at the SEIA donor workshop in Amsterdam, October 2004.

[14] For information on the Amsterdam donor workshop on basic education and EFA implications visit *http://www.worldbank.org/afr/seia* or the Vrije Universiteit, Amsterdam, *http://www.cis.vu.nl/seia-seminar*.

Sub-Saharan African governments rightly continue to focus on achieving primary EFA goals. Several countries are well under way; for example Botswana, Mauritius, Namibia, Senegal, South Africa, Tanzania and Uganda. Others follow close behind but a lack of secondary education development is now threatening these achievements.

In sub-Saharan African countries where EFA programmes are delivering results, expansion of EFA objectives into a basic education[15] framework can be a logical next step (as a gradual transition.) However, governments first need to address the crippling wastage due to high repetition and drop-out rates and change the outdated curricula and assessment practices. Without improving the quality and relevance of what is taught and learned, the expansion of access will not be financially sustainable. While there is an urgent need to give more attention to the quality of pre- and in-service teacher training, the main obstacles are the lack of (1) management and effective use of teachers; and (2) budgetary capacity of governments to recruit the teachers once trained.

Lessons can be learned from successful middle-income countries over the past decade in Asia, Europe and Latin America, where primary and junior secondary education is rapidly becoming universal with private and public funding. Africa needs sustainable primary and secondary education provision. It also needs to adapt to international standards, and secondary students should be able to make flexible transitions between levels.

Generally, there is agreement across stakeholder groups and countries that good quality and relevant junior secondary education should include subjects related to four areas:

- sciences and mathematics
- social, life-skills and geo-world
- ICT and technology
- languages and communication
- extra-curricular activities

[15] Basic education is commonly defined as nine to ten years of education in most middle- and higher-income countries. It is linked to the age group of about five to 16 years. Economic and social evidence points to the importance of providing this age group with general skills for life-long learning and the labour market.

How to translate this into a curriculum for junior secondary is left to the education experts, teachers and educators. This is no easy task. It requires junior and senior secondary education to show flexibility and change over time to ensure that what is learned is of the highest quality and relevant for the local social and economic environment and labour market. For secondary education, a thorny question is to what extent the curriculum for junior secondary education should be directly linked to the world of work. General consensus has emerged over the past decade that junior secondary education should be included in a basic education cycle where general skills and competencies are learned. At senior secondary level the picture is much more complex, and there is a mix of vocational and technical training involved. In many low-income African countries, however, governments continue to run the secondary system mainly as a selection place for university entrance. That is a very expensive and unsustainable way to do business, and it is an outdated concept.

Most donors in Africa exclusively support primary education under EFA. However, EFA needs to be part of a holistic and broad education sector strategy. Exclusive EFA focus on primary education is causing unsustainable pressure on access to junior and senior secondary education, resulting in social and political problems. It takes several years to prepare and implement investment programmes in junior and senior secondary education, even if the funding were to be made available. Many sub-Saharan countries are approaching close to universal intake into Grade 1 (the last EFA monitoring report estimates the average intake rate at 91% for the year 2000/01). While much remains to be done to improve quality and retention to reach a 100% completion rate in primary education, the number of primary school-leavers seeking admission to secondary education is increasing rapidly in Africa. Therefore, governments and their development partners must urgently — for social, economic, financial and equity reasons — start to explore how to address this increasing demand in a sustainable and cost-efficient way.

To develop sustainable strategies for junior and senior secondary education will be much more difficult than for primary education, because difficult choices will need to be made on issues such as:

- what is an affordable percentage of coverage for junior and senior secondary education cycles in specific African countries?

- what is the most effective mix of general, technical and vocational education and training at junior secondary level in Africa?
- how can the curricula and assessment processes be improved?
- what is the capacity and accountability needed to provide junior and senior secondary education in a constrained economy?
- how can governments set up effective public-private partnerships for the adequate provision of junior and senior secondary education services?

Responding to these issues will require civil society consultations that will make difficult political and technical choices and lead to a national secondary education strategy. The biggest question is the economy's ability to finance an expansion of secondary education and to provide gainful employment or further learning opportunities for junior and senior secondary graduates. More needs to be done regarding up-front technical assistance, research into 'what works', international comparative studies, and the development of sustainable national strategies for post-primary education sector development.

All OECD countries have recognised the importance of a dynamic and changing secondary and higher education and training market, which responds to social and economic demand. Sub-Saharan African economies cannot develop with only primary education graduates. The conclusion should be: 'primary Education For All is necessary, but it is not enough!'

Without relevant and well-targeted education and training for the 12–19 age group, it will be impossible for countries to grow and develop. In addition, there are significant social and economic costs for countries failing to do this. Recent conflicts in sub-Saharan Africa (for example, Uganda's conflict in the north, driven by the Lord's Resistance Army rebels) resulted in major upheavals and economic damage. Many of the soldiers and other players in these conflicts are in the 12–19 years age groups.

Box 6: Technical education in Africa[16]

To respond to the growing demand for technical assistance in confronting the problems of reform in secondary education, the World Bank's African Human Development Department started the regional initiative Secondary Education In Africa (SEIA) in 2002. It is a multi-year study (2002–2005) undertaken with public and private African educators and stakeholders and international donors. The SEIA initiative aims to produce and disseminate information and knowledge to assist sub-Saharan countries in the development and reform of their secondary education systems and to promote co-ordination and exchange of information between African secondary education stakeholders, the private sector and civil society organisations, and the donor community.

SEIA outputs are:

- an overview of reform trends and best practices in secondary education in OECD countries;
- a comparative secondary education database for operational purposes;
- eight thematic studies on specific relevant issues; three regional conferences for senior decision-makers in African countries and the donor community to disseminate the results of SEIA; and
- providing countries with technical assistance and research to develop their national secondary education strategies.

Funding for the SEIA initiative by the Norwegian Education Trust Fund (NETF), the Dutch and Irish Trust Funds, and the French government are gratefully acknowledged.

To date, five of the eight SEIA thematic studies are nearing completion, several African countries have national post-primary strategies in place, and lending for it is increasing. However, much remains to be done, and demand is outstripping the capacity for support to African governments and education institutes.

Sub-Saharan Africa needs to integrate new teaching and learning mechanisms for the large proportion (80%) of out-of-school youth. This requires measures regarding the current informal education and training systems. HIV/Aids, life skills, civics, and health education will need to be integrated at the end of primary school, but, more importantly, will need

[16] *African Region Human Development*, World Bank, October 2004.

to be part of both the lower- and upper-secondary cycles. The role and goals of secondary education need to change from the current (out-of-date and highly inefficient) exclusively academic (university) preparation to a self-standing and world-of-work preparatory cycle for the majority of the relevant age groups of 12–15 and 16–19 year olds.

A specific sub-Saharan Africa problem that demands our attention is the secondary school environment. This not only affects education quality but also the physical school environment. Well-functioning or effective secondary schools have a distinct learning and teaching environment. This involves good leadership from the director and a school identity that is based on consensus and agreement with the major stakeholders.

This is, in most cases, expressed in a school-guide or school information leaflet, which identifies the main characteristics and sets the tone for the school regulations and ethics. When teachers apply, they are informed about the school identity, which involves also rules of conduct and expected quality standards of teaching.

This is often referred to as the secondary school's code of conduct. It is all part of the package that defines the secondary school. Secondary school effectiveness studies[17] have shown that a clear school identity and rules of conduct are important factors for the quality of learning and teaching. However, this is impossible as long as living conditions in secondary schools include the current disastrous and inhuman boarding facilities. In Nigeria and Madagascar, the boarding facilities are low on the list of priorities for improving secondary (general, vocational and technical) school infrastructure.

Small prison-like rooms are shared by three to four students, who are adolescents (often ranging 16–24 years old), coming from mostly poor family backgrounds. The sanitary facilities are minimal or lacking totally and would not pass any standard inspection in most middle- and higher-income countries. Furniture is broken, the hallways are dark, and ventilation is poor. Infections are a likely risk, and health services are either completely dysfunctional or simply unable to cope with the needs.

[17] See for example Scheerens J & J Bregman, 'School effectiveness report in Belize'. A study of secondary schools in Belize prepared with the Ministry of Education and Sports, December 1999, World Bank.

In most cases, these facilities do not stimulate or help learning for the young people of a country. In most OECD countries, these physical aspects of the secondary school environment have been fixed at an early stage.

We must develop similar solutions for Africa. This will require in-depth studies on improved housing and boarding, better school buildings, and the rigorous implementation of quality and efficiency standards for infrastructure and the school and boarding environment. When 12–15 and 16–19 year old students live in undignified conditions in secondary school boarding facilities, they are unlikely to gain the necessary self-respect and respect for others, develop healthy lifestyles, and contribute positively to their insertion into the world of work.

A reform under way in England includes the aim that education and training for 14–19 year olds should:

a) meet the needs and aspirations of all young people, including those who face obstacles to their progress in learning, and those who have the potential to reach the very highest levels of achievement;

b) raise the levels of achievement of all young people, reduce the gap in achievement between various socio-economic and ethnic groups and increase participation in post-16 education and training, including higher education;

c) broaden the skills acquired by all young people to improve their employability, bridge the skills gap identified by employers and overcome social exclusion; and

d) be delivered through flexible, integrated and innovative networks of providers committed to achieving ambitious new goals for all young people in the 14–19 phase of their lives and their education.

African economies can learn from the trends in England because they need to build up their human capital by improving the quality, efficiency and relevance of their education. Tough competition for Africa comes from the middle- and higher-income countries, which are continuously improving, reforming and re-shaping their education systems. The example from the English education system is relevant, since it illustrates the importance that countries such as the United Kingdom attach to their 14–19 year age group. Most OECD countries do the same. These principles or

major objectives, formulated at the political level, represent the politicians' commitment to improving secondary education in England. It is important for Africa to show the same kind of commitment and have clearly stated general objectives for improvement. Translating these general objectives into technical and practical pathways and learning programmes is, of course, not easy and will require significant expertise from the senior technicians. But in Africa we have seen time and again that what is called secondary education reform is simply a change in the written syllabus by university professors (and other technicians), without underlying and generally accepted political guidance and support.

It is interesting to look at some of the major secondary education reform trends in OECD countries and throughout the world and discuss possible best practices for Africa. Most industrialised OECD countries implemented major primary education reforms in the early 1990s, and have subsequently continued to reform their lower- and upper-secondary education systems over the past few years. Many of these secondary reforms are still ongoing, also fuelled by the increasing and rapid changes brought by the information and communication technology (ICT) revolution.

Where were most OECD countries with their secondary education in the second half of the twentieth century, and what were the major issues they dealt with over the past decade or so? Trends in secondary education are, of course, intertwined with the global trends in the education systems as a whole. The pace and intensity of education reforms in OECD countries accelerated over the past decade. The focus has been on youth issues, in which secondary education reforms played an important role. The general move is to retain all 12–16 year old children in schools and to provide meaningful further learning paths for the post-16 age group. This has been accompanied by the launching of incentives for life-long-learning schemes, with the support of enterprises and education stakeholders. Thus, new so-called 'education industries', many in the realm of secondary education, have sprouted up in Asia, Latin America and Europe, and lately also in some African countries (Botswana, Mauritius, South Africa and Senegal).

These 'education industries' exist already in the industrialised countries and are one of the driving forces behind the technological and economic

dominance of these countries. Universities have teamed up with national and international companies to offer a greater variety of courses, to mix international practical work with study, and to generally provide better links to the transition from school to work. Attracting the brightest foreign students gives a country research power, innovation and stimulates research. In Botswana, Mauritius, South Africa and Senegal, efforts to establish a more international exchange programme, with mutual benefits for the country and the individual students, are emerging. Lately, a second goal in higher-income countries, resulting from the restructuring of higher education, is to attract foreign students for their paying power, which helps universities to bridge the funding gap from public resources.

This requires a country to:

- have an attractive and flexible university environment;
- have an excellent reputation for high quality and reliability;
- offer good facilities and extra-curricular packages for students and scholars;
- offer effective student and staff services on campus and or in distance learning; and
- have a network of certification that is recognised in the country of the student's origin and elsewhere.

Although there is a firm conviction among most education stakeholders in the world that ICT will and should contribute to the delivery and effectiveness of education, for many African developing countries ICT presents a risky and capital-intensive investment in their education and training systems. The costs are not only relatively high for hardware, but also for training teachers, providing course materials and updating the courses and equipment at an ever-increasing pace as the ICT market further develops. To make rational and cost-efficient choices under those conditions is challenging to say the least, and will use a significant proportion of scarce public resources in an environment of great fiscal constraint in all African countries. There are also prudent reservations emerging about the educational benefits of ICT investment versus investments in the classical educational inputs, such as textbooks, teacher guides, and extra-curricular materials. However, ICT is here to stay and African educators are already integrating it.

Mauritius has integrated ICT in its primary and secondary education. In Botswana, Senegal, Namibia, and South Africa, the ICT integration in secondary schools is under way, in many cases supported and driven by private groups. It should be noted that in many African countries ICT education is being introduced through the back door, with the help of the private sector and or enterprises and parent associations. However, the initial investment is significant and, in most cases, the recurrent budget does not include a regular replacement and updating of the equipment and methods.

The ICT curriculum is constantly undergoing (rapid) changes in the middle- and higher-income countries.[18] For the lower-income countries, it is all the more important to get the private sector involved and to look at the effectiveness of the ICT investment against other priorities (for example, supplying textbooks and other teaching materials). In lower-income African countries, governments are tempted to get into vocational training on ICT.

This would be a big mistake, since specific job-training changes rapidly (too fast for education ministries to follow). Job training is best left to private initiatives (private training institutes) and enterprises. If warranted, specific and targeted public financing could be considered for individuals, which has proven to be effective. After all, people will vote with their 'feet' if they want the best for themselves.

The benefits of ICT investments that have already proven their pay-off are in administration, management and monitoring. In addition, the potential for improved access to information (for example, in school and training centre libraries) is enormous and does not stand in doubt. It will be crucial to involve the private sector in Africa to minimise risks, provide greater flexibility and better market orientation, and to make sure that ICT investment and use at the secondary education level respond to economic and labour market demands. This will be a tough challenge for all African countries.

[18] See the OECD education and the European Union education websites on ICT programmes. Also, many EU countries have national education websites and tools for teachers of ICT.

Overall, OECD secondary education reforms[19] over the past decade focused on:

- meeting the needs and aspirations of all secondary-school-aged people, including those who need extra support in learning, and those who have the potential to reach the very highest levels of achievement;
- raising achievement levels and reducing the gap between various socioeconomic and ethnic groups;
- increasing participation in post-16 education and training, including higher education and vocational (job) training;
- promoting life-long-learning (LLL) opportunities and improving skills for future employability;
- using and integrating ICT as learning and teaching tools. This includes specific teacher training for using ICT as a pedagogic tool and, separately, the development of ICT as a self-standing subject to provide all secondary graduates with basic ICT skills;
- modernising the content (curricula) of what is learned and taught, with specific standards for the lower- and upper-secondary education level;
- bridging the skills gap identified by employers and overcoming social exclusion. There is now a general consensus that the lower- and upper-secondary education levels need to focus on general skills (even though there is more general vocationalisation at the upper-secondary level, and an integration of vocational training to some degree);
- developing general skills for further study and faster integration in the 'world of work' (which has taken over from the more traditional notions of technical and vocational[20] education). These include (i) knowing how to use and apply communication and information technology; (ii) the ability to apply basic mathematics and science principles; (iii) a working knowledge of at least one foreign international language; (iv) a problem-

[19] Author's review of several education and training websites of OECD countries.

[20] Please note that an important and specific distinction is made in the definition of technical and vocational education (which promotes general skills and attitudes, preparing students for the world of work) versus vocational training (which is job-specific training).

solving attitude and competency; (v) the ability to work in groups; and (vi) general skills to undertake further learning and job training; and

- promoting more flexible, integrated and innovative networks of providers committed to achieving ambitious new goals (over the past years, new, shorter and more innovative mechanisms and routes to obtain secondary completion qualifications have been developed). In all cases, the role of the private sector as provider, manager and financier has been enhanced and pro-actively encouraged by the governments. This also includes the use of distance-learning, ICT, and shorter courses adapted for second-chance students and adults.

Reforms in OECD countries during the early 1970s led to lower secondary education becoming compulsory and a part of basic education. Mass education (in terms of quality, access and equity) was achieved by the late 1970s. However, new challenges were on the way driven by the information and technology revolution, which accelerated in the mid-1990s. During the early 1990s, the general focus of education reforms in most OECD countries was on improving the quality and relevance of education, and defining the role and responsibility of public education in the knowledge-based economy.

First improvements in primary education were addressed. Many countries realised that primary school graduates needed (a) to be better prepared for the secondary level; and (b) an improved and more relevant curriculum to be able to succeed at the next education level. In many countries this led to a 'rethinking' of the role and importance of pre-schooling. In the Netherlands, for example, the kindergarten level was integrated into an eight-year primary cycle.

By the mid-1990s, most OECD countries were also implementing major structural reforms at lower- and upper-secondary levels so as to adjust to the changing socio-economic needs. In addition, the profile of the job market changed (there were new job categories). This also pushed through significant changes at the tertiary level, and forced universities to change and diversify their services (providing more diverse and flexible courses).

Access, retention and transition policies shifted the focus to keeping students in the system, ideally through all of secondary education, rather than selecting them out. Special-needs students were more integrated into general education settings. Repetition practices were significantly

restricted and automatic access to lower secondary and also upper secondary became common. Student and teacher support systems at the (upper) secondary school level were strengthened and expanded (for example, student guidance and information systems for easier transition to tertiary and vocational education and training and to the job market). Accountability of secondary schools was significantly increased, bringing improved and modern management styles and performance-based monitoring. More schooling options at the upper-secondary level, such as private secondary schools with public funding, were provided to the public. As a result, access to higher education also increased.

Box 7: Managing secondary schools in Mozambique[21]

Secondary schools in Mozambique generally face management problems, though the quality of management varies greatly. The salary of a school director (irrespective of the type or size of school) does not attract the kind of competition that would ensure high quality managers. There are no performance contracts and the system is characterised by the presence or absence of personal enthusiasm and commitment. Management is complicated by the dual (and often triple) shift system. Management training is limited. Most principals knew of the 'Better Schools' programme, but its implementation varies from province to province.

Few schools have management committees or school councils, with representation from the community and civil society. This weakens the accountability of the school to civil society in general and to the local community in particular. Less than 20% of secondary teachers are women and less than 10% of school directors are female. This does not allow for the promotion of role models for girl students. The sexual harassment of girl students is reported to be an increasing problem and is not being treated as a serious management issue.

But with the arrival of ICT tools, there is a continuing move towards a greater degree of vocational and technical education at upper-secondary level. However, this poses considerable challenges for teacher training and

[21] *Secondary and Secondary Teacher Education Strategic Plan*. Mozambique: World Bank, 2000.

linking secondary students' learning to local enterprises and industries. Changes in these areas are still ongoing and many OECD countries are experimenting with innovative schemes. For example, in Scotland vocational training courses are offered as selective modules at the upper-secondary level in addition to the more academically oriented subjects. This is realised through institutional co-operation between vocational colleges and more traditional secondary schools.

In all OECD countries, the need for better monitoring of performance outcomes in terms of quality and efficiency is understood and accepted. New and efficient monitoring tools (using ICT) are on the market and are continuing to drive system changes. The academic orientation of the secondary education system has begun to be mixed with vocational training components. More pathways have been created within and at the end of secondary education. Questions regarding the nature and purpose of vocational training have been addressed. Most countries are moving away from costly and often out-of-date specialised job training at secondary level. At tertiary level, the universities, in many instances with private sector support and collaboration, have changed and started to offer more diverse vocational training.

The need to have a flexible and mobile workforce, qualified for life-long learning necessary to compete in the global knowledge-based economy, generated questions regarding curricula as well as educational practices in the European Union. Curricula moved from input-based to outcome-based, providing students with key competencies such as team-work, problem-solving and finding and applying relevant information. More emphasis was placed on the application of knowledge and learning of cross-curricular skills rather than the reproduction of knowledge. ICT, as a subject as well as a tool of learning, is now a major focus at secondary level.

The secondary teacher was also promoted as a facilitator of learning, offering students stronger incentives to participate and learn. Pre-service training included new methods for teaching the new skills aligned with the new curricula. More systematic means to support, supervise and counsel teachers, particularly new teachers, were also instituted.

Management and governance of the education system was decentralised, allowing for secondary schools to become autonomous and

make context-specific decisions regarding programmes, curricula and even financing. Standards for performance were developed and formula-funding mechanisms were implemented. This allowed for the inclusion and public funding of private providers. All reforms required national consensus-building and discussions, often over several years. Discussions involving all education stakeholders allowed for a more efficient distribution of roles and responsibilities required to govern at each level, leading to a greater accountability for schools' performance as well as for the system as a whole.

More sophisticated evaluation and monitoring systems were developed to meet a variety of needs: control, accountability, and to gain systematic, empirical knowledge for improvement. Presently in OECD countries, monitoring and evaluation include multiple levels, with a clear coherence and identified performance indicators at municipal, regional and national levels. The methods and perspectives vary depending on the purpose of the evaluation. International assessments and evaluations are done in the OECD, where member countries agree to launch evaluative programmes in certain subject areas. The results from these evaluations stimulate debates on education quality in each of the participating countries.

As lower secondary education became an extension of primary education, the ranking function of traditional exams became less important, and most OECD countries no longer have an examination between primary and lower-secondary education. However, most countries have maintained a diagnostic assessment of primary students at the end of this cycle. The assessment results are used at the lower-secondary level. All these systems are computerised. It should not be forgotten that many of these measures and monitoring methods were only made possible because of the use of IT tools. The majority of countries still have national exams as an important part of upper secondary completion. Transition and admission to tertiary level courses and institutions are diverse, and in many cases complement the end-of-cycle secondary examination results.

As OECD countries have addressed all facets of secondary education through continuous reforms, so are African countries. As the 2000 World Bank report *Can Africa Claim the 21st Century?* points out, 'the new century offers a window of opportunity to reverse the marginalisation of

Africa's people, and of Africa's governments, relative to donors, in the development agenda. One of Africa's main productive assets is its people'.

African countries and bi- and multilateral donors have created partnerships to address education sector challenges. This includes a shift to a more sector-wide approach, combined with a priority for achieving EFA and MDG goals. There is a trend to emphasise the need for institutional capacity building and strengthening. However, there should be a critical analysis of why the results of institutional capacity building have been so minimal or weak over the past two or three decades. Obviously, donors need to set clearer (and more measurable) goals linked to performance indicators, and improve their identification of bottlenecks in these areas.

In most sub-Saharan countries, junior and senior secondary education is growing, and the demand grows even faster. This will contribute to achieving EFA and, more importantly, social and economic development growth. The issues to be discussed at Africa's political and technical level are how expansion can be made sustainable in a cost-efficient manner and how the education system can deliver the competencies and skills necessary for the economy and society and, ultimately, make Africa more competitive in the global market.

Planning and Financing Secondary Education in Africa

Keith M Lewin[1]

Introduction

There are about 86 million children of secondary school age in sub-Saharan Africa, about 23 million of whom are in school. Most of the remaining 63 million are concentrated in the larger, poorer countries. Nineteen out of 43 countries in the region account for 87% of those who are not in school, and four countries — Nigeria, Ethiopia, the Democratic Republic of Congo (DRC) and Tanzania — account for 46% of the total. The average Gross National Income (GNI) per capita of these 19 countries is below $400 (see Table 1).

The secondary Gross Enrolment Rate (GER2, the number of children enrolled divided by the number of children of school-going age) is below 20% in 15 countries, and below 50% in 37. Niger, Burkina Faso, Tanzania, Burundi, Chad, the Central African Republic, Mozambique, Madagascar, and Rwanda stand out as having the lowest GER2s, while Mali, Uganda, the DRC, Ethiopia, Angola and Senegal are in the next group. The countries with high enrolment rates are South Africa, Namibia, Cape Verde, Botswana, Mauritius and the Seychelles, which all have GER2s of 79% or more and an average GNI/capita of over $3,500 (see Table 2).

In total, sub-Saharan Africa has an average GER2 of about 26%. Since many school-going children are over-aged because of repetition, the actual proportion of the age group attending is lower than the GER. Therefore, probably fewer than 20% of children experience secondary schooling. The GER2 values in other parts of the developing world are much higher (52% in South Asia; 65% in East Asia and the Pacific; 60% in Arab States and

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North Africa; and 82% in Latin America and the Caribbean). While sub-Saharan Africa has been closing the gap in primary enrolment rates between itself and the rest of the world, the gap at secondary level has remained wide and may actually have been growing.

Policy on secondary education in Africa is increasingly being recognised as an area of neglect. At both the first and second Regional Conferences on Secondary Education in Africa (*http://www.worldbank.org/afr/seia/*) contributors drew attention to the need to address the consequences of the Education for All (EFA) programmes constructively; to respond to the increasing pressure on access to secondary schooling; and to close the educational gap between sub-Saharan Africa and the rest of the world.

Without new policy, social exclusion will grow; the educational levels of Africa's labour force will fall further behind those in other parts of the world, and the Millennium Development Goals (MDGs) will not be achieved. For new policy to succeed, it will need to explore and resolve a challenging set of planning and financing issues.

This paper is in three parts. The first reviews the case for new policy and investment in secondary education. The second discusses a planning framework, estimates costs and presents reflections from two country case studies. The third draws together some concluding remarks.

Why is a new strategy needed?

There are many reasons why Africa needs a new strategy for secondary education. First, the number of primary school graduates in much of sub-Saharan Africa is set to double or triple over the next five years as a result of the successful universal primary schooling under EFA programmes.

In Uganda, the number of primary school leavers is expected to increase from 400,000 to over one million; in Tanzania, primary school leavers will increase from 450,000 to 1.2 million; while in Malawi the numbers will grow from about 200,000 to over 500,000. Existing secondary school systems will not be able to absorb such large increases without reform and increased resources. The issue of access to secondary school will become a major political and social preoccupation in those countries with low secondary enrolment rates.

Second, expanded access is necessary because neither the second nor third MDGs (namely, universalising primary school access and completion; and eliminating gender disparities in primary and secondary schools) are attainable without expanded secondary enrolment.

The second MDG (universalising primary access and completion) depends on transition rates to secondary schools being maintained or increased. If these fall dramatically, retention in upper primary will decrease as it becomes clear that, for many, there will be no progression beyond primary school. Transition rates to secondary schools have been static over the past decade in much of sub-Saharan Africa, and they are falling where primary enrolment growth has been fastest. MDG2 also depends on an adequate supply of qualified primary teachers. Quality, achievement and persistence at primary level will suffer without adequate numbers successfully completing secondary schooling and electing to train as teachers, and pupil-to-teacher ratios will remain stubbornly high. In some countries, secondary school systems are simply too small to meet the demand for teacher trainees.

The third MDG (eliminating gender disparities) can also not be achieved without greater enrolments at secondary level. There is only one country in sub-Saharan Africa, on which there is data, that has a GER2 of less than 50% and which has more girls than boys enrolled (Lesotho). This is because of male migration. All other countries with a GER2 below 50% have more boys than girls enrolled. All countries with a GER2 greater than 50% are approaching gender parity or better.

Third, poverty reduction and increased equity have direct links with participation in secondary school. As primary schooling becomes universalised, it will be participation at secondary level that becomes a major determinant of life chances — and a cause of subsequent inequity. Access to, and success in, secondary schooling will continue to be highly correlated with subsequent income and social well-being.

Currently, many are marginalised from attendance by high direct costs, the absence of schools, and other disadvantages. In much of sub-Saharan Africa, it is unlikely that households outside the top 20% income bracket can afford to have a single child in public secondary schools. For example, participation rates of the richest 20% of households are more than 20 times those of the poorest 40% of households in Tanzania; while in

Ghana, 40% of entrants to the University of Ghana originated from just 5% of the secondary schools, many of which are expensive, private schools. The University of Science and Technology admitted 46% of its students from just 8% of the relevant secondary schools.

If secondary school systems do not expand and broaden access, marginalisation will increase. Real improvements in the upward social mobility of the poor depend on this change. Poverty is partly defined by the denial of access to public services. Secondary schooling is a public good which should not exclude the disadvantaged, but the more access is limited, the more they will be excluded.

Fourth, national competitiveness, especially in high-value-added modern-sector economic activity, depends on knowledge and skills associated with abstract reasoning, analysis, language and communication abilities, and the applications of science and technology.

There is much evidence to suggest that those with secondary schooling acquire useful skills and increase their chances of formal sector employment and informal sector livelihoods; that export-led growth is associated more with investments at post-primary than at primary level; and that rates of return on secondary schooling remain positive in most of sub-Saharan Africa, especially for girls.

The region's economies need growth to sustain EFA and achieve the MDGs. In low enrolment countries where less than 10% of the labour force has successfully completed secondary schooling, it is unclear how foreign direct investment will be attracted or endogenous growth generated if these depend on higher levels of knowledge and skill.

Fifth, expanded secondary schooling is unattainable with current cost structures. The basic arithmetic of the dilemma is simple and has two key dimensions. First, public expenditure per pupil at secondary level across sub-Saharan Africa is, on average, about five times higher than at primary level. On this basis, achieving a GER2 of 50% would require about 70% more than total primary school expenditure (assuming secondary schooling is four years long, primary is six years, GER1 = 100% and GER2 = 50% and the ratio of secondary to primary unit costs is 5:1). No country in the region that has low secondary enrolment and is committed to EFA appears to spend more on secondary than on primary schooling, and none are likely to do so under current conditions for external assistance. Unit

costs will have to fall if the development gains associated with expanded secondary schooling are to be achieved. Allocations to secondary education will have to grow, but in ways that do not jeopardise investment in primary schooling. Second, most secondary schooling has high direct costs to households, as it requires the payment of fees. Household income data suggests that unless direct costs fall, those beyond about the twentieth percentile of household income are unlikely to be enrolled. Affordability — the cost to households — will restrict the expansion of public enrolments and limit the growth of private providers.

Other factors necessitate the development of secondary schooling. Seropositive rates for HIV/Aids tend to be lower for those with more education, and in Burundi, Eritrea, Mozambique, Tanzania and Zimbabwe, those in school are less at risk than those out of school — especially females. Whatever the mechanism, expanded access to secondary schooling should reduce HIV/Aids infection rates.

Furthermore, some countries in sub-Saharan Africa have lost a generation of secondary school leavers through civil wars and cross-border conflicts. The replenishment of middle level cadres to re-establish competent middle management and states' capacities to govern would seem to require some prioritisation of secondary schooling.

Where secondary curricula have remained unchanged for decades; lack relevance and utility; are embedded in elite traditions of academic schooling; and use outmoded pedagogies, it is clear that reform is needed. In all the poorest countries, textbooks and other curriculum materials remain in short supply and much learning still takes place without access to any printed material.

A planning framework

This formula represents gross enrolment rates (GER) at secondary level:
GER2 = x/ac where:
x = Public spending on secondary education as percentage of GNP
c = Public recurrent expenditure on secondary schooling per student as a percentage of GNP per capita
a = Proportion of the population of secondary school age

In sub-Saharan Africa, **a** is generally within the range of 10% and 15% and tends to be closer to 15% in the low-enrolment countries. A GER2 of 50% then requires an average allocation of about 2.3% of GNP to secondary schooling alone, assuming that unit costs average about 0.31% of GNP per capita. This is about double current average allocations to secondary schooling in the region. Higher enrolment countries generally have lower relative unit costs for secondary education.

Figure 1 profiles five different possible cases for values of **x**, **c** and **GER2** with possible interpretations of their significance.

1. Where both **x** and **c** are low, and GER2 is low, it suggests that there is not much commitment to expanding participation in secondary schools and that the education budget as a whole is a small proportion of GNP. The most obvious way of expanding access is likely to be to give education in general and secondary schooling in particular more budgetary priority.
2. Where budgetary allocation is low and unit costs high, participation will be very low. The implication is that small numbers of students are benefiting from secondary schooling, which ought to be of relatively high quality given its costs. Expansion will be constrained by high unit costs.
3. Where budgetary allocation is high and costs are high, participation will also be constrained by costs, which need to fall if access is to be expanded.
4. Countries with low budgetary allocations and low public unit costs can have relatively high participation if large proportions of costs are met outside the public budget, through community support and private schooling. This may have equity implications.
5. Where budgetary allocations are high and unit costs are low, participation should be high but its quality may be questionable

The costs of expansion

The magnitude of additional resources that might be needed to support expanded enrolment depends on a wide range of factors, not least the GER2 level targeted. If GER2 = 50% is chosen as a target, the amounts

needed can then be estimated country by country by multiplying the number of additional places needed by the average unit cost.

Data on the unit costs of secondary schooling is incomplete and unreliable. Figures from the Unesco Institute for Statistics (UIS), published in 2004, indicate that average lower secondary unit costs as a percentage of GDP per capita average 25% to 40% of GNP per capita and about twice as much for upper secondary. If these kinds of levels are taken as indicative, then, for the countries with the most un-enrolled secondary school-aged children, the average unit cost would translate into about $100 per student at lower secondary and $220 at upper secondary.

Table 3 shows the additional amounts of recurrent funding that might be needed. Across sub-Saharan Africa, the total additional recurrent amounts needed appear to be in the region of $2.3 billion per annum. This is based on current costs and numbers of school-aged children, but costs in the future may be much greater, depending on how expansion occurs and what targets are set.

Five countries — the DRC, Nigeria, Tanzania, Angola and Côte d'Ivoire — all require more than an additional $150 million each year, and account for about 58% of the total needed. Looked at another way, an additional $1 billion per annum would be sufficient to support GER2 = 50% for the 31 other countries currently listed as below GER2 50%. If external resources are limited, the question will arise as to whether support should be directed towards countries with the largest numbers un-enrolled, or to those with the lowest enrolment rates.

Classroom-building costs in low-income sub-Saharan Africa appear to average about $10,000. The cost of building a new school is a multiple of the cost of the constituent classrooms to account for land, infrastructure, common facilities, teacher housing etc. The average cost of a classroom in a new school may therefore be three or more times the basic unit cost per classroom. $30,000 would seem a minimum figure for a classroom in a new school. If this is so, then development expenditure requirements to reach GER2 50% would be over $10 billion, assuming half the expansion was in additional classrooms and half in new schools. More than half of the expenditure would be located in the four countries with the largest numbers of un-enrolled children. This development expenditure relates to buildings and facilities that should have a working life of 30 to 50 years.

The costs might be less if community-based methods of construction can be used successfully on a large scale.

These simple estimates are based on education systems as currently configured and thus do not account for changes in unit costs that might arise from reforms of structure, curricula, or working practices or from changes in repetition and drop-out rates. Neither do they consider the future growth in numbers of school-aged children. They cannot show how cost might evolve over time because this depends on decisions on the rate of expansion that can be sustained. Nor can they indicate how much additional expenditure might be met from public and private domestic resources, and how much might need external assistance. They also ignore limits to effective demand arising from high direct costs to households.

To cost secondary expansion, it is necessary to decide how growth may occur in different countries. In each country, some configurations for expansion are possible and others are not. We have already noted that universalisation of secondary schooling in a typical low enrolment country is not feasible at existing levels of unit cost, since it would require 4% of GDP or more annually.

Even if the public resources were available, poor households would not be able to afford the private costs of public schools as currently configured, and even less the costs of unsubsidised non-state providers. Expanded access thus appears to need reforms that reduce costs relative to GDP per student. It may also need increased subsidies that lower the direct costs to poor households, especially if equity is a concern.

Aggregated modelling of secondary expansion across countries in sub-Saharan Africa may be misleading. Starting points are too varied, constraints on policy variables are too diverse, and the systems themselves are often complex and differentiated by institutional types, ownership, costs, fees, working practices and so on. Moreover, the cross-national data sets available are not yet reliable, contain many omissions of key data, and conceal important differences in their aggregations.

However, it is possible to model individual systems. This has been completed for Tanzania and Uganda. Tanzania starts from very low enrolment rates and wishes to expand rapidly, with additional external support. Uganda has higher participation rates and anticipates more modest growth rates.

In neither country are the projections driven by the number of children who finish primary school. This was rejected as a good base from which to estimate likely secondary intakes for several reasons.

First, the shape of the 'wave' of primary students who will graduate is irregular. In both countries, the rate of increase of primary school leavers is so steep that no conceivable expansion of places in the first year of secondary schools could keep pace in the short term. Transition rates are likely to fall before recovering.

Second, enrolment increases in secondary school are physically constrained by the number of places available, which will be determined mostly by the rate at which governments create new capacity and employ new teachers.

Third, enrolment growth may stall if direct costs exceed household capacity to pay.

Included in the projections are various reforms, which are designed to improve quality, enhance equity, and increase financial sustainability and which arose from discussions with stakeholders. Though these are extensively detailed in documentation related to the plans, common aspects include increases in pupil-to-teacher ratios to about 30:1; enhanced capitation arrangements; bursary schemes for the poor; learning material subsidies; curriculum reform to focus on core subjects; more cost-efficient and effective teacher education; and support for some specialised institutions, especially those that serve disadvantaged populations.

Some general observations from the modelling include:

- the likelihood that transition rates from primary to secondary school will fall before recovering as a result of successful EFA programmes at primary level.
- the importance of increases in internal efficiency for greater participation at affordable costs, since unit costs must fall if participation is to grow substantially.
- the difficulties of reaching and sustaining GER2 much greater than 50% in all but the longer term in much of sub-Saharan Africa because of high public and private costs and high dependency ratios.

- the importance of understanding admission and progression policies at secondary level and their consequences for increased participation, repetition and drop-out.
- the curriculum issues related to expansion, which have cost implications (numbers of core and elective subjects, revision in the light of a different quality of new learners, the implications of language competence where the medium of instruction is not the mother tongue).
- the need to invest in affordable learning materials to ensure reasonable access to books etc.
- the need to reduce the uncertainties that surround the further expansion of the non-government sector, both for profit and not for profit, especially in relation to its impact on the poor and on government provision.
- the impact of the affordability of fees and other direct costs on participation in both public and private schools (participation cannot grow at current levels of direct costs where these begin to exceed households' ability to pay).
- the problems that arise in ensuring a timely and affordable supply of newly qualified teachers (who may require long lead times to train), and the difficulties of retaining them in schools (where graduate attrition rates may exceed 10% per annum).
- the apparent variability of projected construction costs and the difficulties of maintaining control over costs and quality in both community and commercial contracting.
- the need to identify the scope for shifting budget allocations between sectors, increasing the size of the education budget, and managing cost recovery in ways that benefit the poor.

The gaps in funding that can be identified when the projections are run depend on many things. Gaps related to secondary schooling may be partly covered using surpluses that arise in other parts of the education budget. For example, primary expenditure may rise slower than the overall education budget does, once universal enrolment has been achieved.

Recurrent and development budgets sometimes overlap, with recurrent costs being paid from development budget lines, adding to confusion about how gaps may evolve. What is clear is that the gaps and their

characteristics need to be identified country by country, and that these gaps, along with non-financial factors, will be a constraint on growth in many low-enrolment countries.

Concluding remarks

This paper has reviewed the case for revisiting investment strategies for secondary education in sub-Saharan Africa. The case made is that the MDG and Dakar goals will only be met through a balanced approach that recognises that investment above the primary school level interacts with the development of universal primary policies; that gender equity is more likely with higher rates of participation at secondary level; and that finance and cost structures for secondary schooling require reform if there is to be much prospect of mass participation in sub-Saharan Africa. More generally, the sustainability of EFA will depend on economic growth, and this is more likely with the strategic development of secondary schooling than without it.

Several summary points stand out.

- expanding access to secondary schooling in low-enrolment countries invites a range of strategies designed to increase policy commitment to the development of the sub-sector, identify critical constraints, and resolve resource issues.
- in some systems, much can be achieved through improved internal efficiency, which might double enrolments without adding much to overall costs through reductions in unit costs. In other systems, it will be very important to increase the share of the budget that is allocated to secondary schooling.
- major structural reform at secondary level (for example, changing the length of cycles and adding lower secondary grades to primary schools) may be an option in some cases, but this depends on consistent political commitment. The transition costs may be high.
- the direct costs of participation are a constraint throughout sub-Saharan Africa and generally result in the exclusion of most of the poor. Therefore, planned expansion should be more equitable and will have to address questions of affordability. Community initiatives may be able

to share the development costs of new schools, but they are unlikely to support recurrent costs, except in relatively rich communities.

- non-government providers can and do support a proportion of enrolments at secondary level. There are limits to future growth of the sector determined by affordability and by concerns with effective regulation, quality, and equity. It is unlikely to be the method of choice in expanding participation in most systems to a GER2 of 50% or greater.
- expanded participation requires curriculum development to reflect new goals for an expanded cohort of pupils with different qualities to those selected for secondary schooling in highly selective systems. A focus on a limited core of subjects, movement towards curricula linked to criterion levels of achievement, and an adequate supply of learning materials inappropriate languages are obvious starting points.
- the non-financial constraints to growth may prove definitive. Planned growth that does not undermine quality depends on new and expanded physical facilities appropriately located, an adequate supply of trained teachers, sufficient learning materials, curricula and pedagogy sufficiently attractive to retain pupils, and valid and reliable assessment systems. The lead times associated with overcoming these constraints have to be part of planned growth.
- greatly increased numbers of primary school graduates seeking admission to secondary schools will become a highly visible feature of the political landscape in sub-Saharan Africa. Without a strategic approach, transition rates into secondary schooling will fall, access may become less equitable, and sustained EFA will be jeopardised.
- the type and magnitude of external support that should be committed to enhancing participation at secondary level depend on a consensus about the importance of investment in the sub-sector relative to others, especially primary; the length of time over which enrolment goals are to be met; the balance of existing domestic investment between education sub-sectors; and the profile of external assistance from multi- and bi-lateral sources.
- sustaining a GER2 of 50% across sub-Saharan Africa would require more than $2.3 billion a year — in addition to current allocations. Less might be needed if efficiency gains were substantial; more might be needed if extending secondary schooling to unserved populations turned out to be

much more expensive than current provision. Better estimates of costs are needed — estimates grounded in data from each system and linked to feasible programmes of reform that have been designed to maximise more equitable access and preserve quality.

Participation at secondary level in sub-Saharan Africa will grow, and will contribute to achieving the education-related MDGs and Dakar targets. The central issue remains how to finance and manage this growth in ways that are more equitable and efficient, that recognise the non-financial constraints on growth, and that offer the prospect of improved quality, competence and relevance to those who are facing increasingly competitive national and international labour markets.

Table 1: Countries in sub-Saharan Africa, listed by the number of children enrolled in secondary school (UIS 2004)										
	Age range	*School age pop '000*	*Enrolled '000*	*Not Enrolled '000*	*GER2 2000 %*	*GER2 lower %*	*GER2 upper %*	*Transition rate %*	*GER1 %*	*GNI/ Cap $*
Nigeria	12–17	16,364	4,601	11,763	28			39	96	320
Ethiopia	13–18	8,307	1,495	6,812	18	26	11	96	64	90
DRC	12–17	7,183	1,292	5,891	18					660
Tanzania	14–19	4,831	279	4,552	10	11	1	17	69	290
Uganda	13–18	3,253	571	2,682	17	21	8		136	240
Mozambique	11–17	2,962	352	2,610	13	31	5	56	99	210
Côte d'Ivoire	12–18	2,857	664	2,193	23	32		40	80	640
Madagascar	11–17	2,569	426	2,143	14			47	104	290
Kenya	13–17	3,317	1,251	2,066	32	37	25	75	96	390
Angola	10–16	2,270	400	1,870	19	24	11			740
Ghana	12–17	2,851	1,031	1,820	38	58	17	82	81	320
Burkina Faso	13–19	1,951	199	1,752	10	14	5	36	44	300
Cameroon	12–18	2,496	836	1,660	33	29	38	27	107	640
Niger	13–19	1,686	108	1,578	6	9	3	31	40	200
Mali	13–18	1,520	228	1,292	15	23		52	57	290
Senegal	13–19	1,472	263	1,209	19	23	12		75	550
Chad	12–18	1,235	148	1,087	12			47	73	250
Zimbabwe	13–18	1,898	844	1,054	43	64	31		99	400
Guinea	13–19	1,282	271	1,011	21	24		56	77	430
Burundi	13–19	1,106	113	993	11	13	7	22	71	100
Rwanda	13–18	1,144	161	983	14	16	13	99	117	220
Zambia	14–18	1,203	283	920	24	37	15	44	79	380
Malawi	12–17	1,367	488	879	34	49	17	82	146	170
Benin	12–18	1,085	287	798	26	35	13	58	104	440
South Africa	14–18	4,743	4,142	601	86	101	77	92	105	2,780
CAR	12–18	592	71	521	12	14			66	260

Table 1: Countries in sub-Saharan Africa, listed by the number of children enrolled in secondary school (UIS 2004) (continued)										
	Age range	*School age pop '000*	*Enrolled '000*	*Not Enrolled '000*	*GER2 2000 %*	*GER2 lower %*	*GER 2 upper %*	*Transition rate %*	*GER1 %*	*GNI/ Cap $*
Togo	12–18	738	289	449	39	61	0	68	124	310
Sierra Leone	12–17	588	156	432	27					150
Eritrea	12–17	502	142	360	28	41	20	81	61	190
Liberia	12–17	457	105	352	23			75		130
Congo	12–18	471	197	274	32	42	17	91	86	100
Lesotho	13–17	226	74	152	34	41	22	53	124	590
Guinea-Bissau	13–17	129	26	103	20			63		140
Gambia	13–18	150	56	94	34	48	19	89	79	310
Comoros	12–18	120	34	86	28	33	20		90	450
Namibia	13–17	201	124	77	61	79	31	83	106	1,870
Gabon	12–18	171	102	69	51	63	32		134	3,580
Swaziland	13–17	106	48	58	45	53	32	92	100	1,350
Equatorial Guinea	12–18	69	21	48	30	41	13		126	
Botswana	13–17	197	156	41	73	86	52	96	103	3,430
Mauritius	12–18	137	105	32	80	93	69	60	106	4,090
São Tomé and Principe	13–18	28	11	17	39	65	23		126	320
Cape Verde	12–17	60	46	14	66	96	50		123	1,490
Seychelles	12–16	7	8	-1	110	111	108		116	7,480

Table 2: Countries in Sub-Saharan Africa, listed by GER at secondary level (UIS 2004)										
	Age range	*School age pop '000*	*Enrolled '000*	*Not Enrolled '000*	*GER2 2000 %*	*GER2 lower %*	*GER 2 upper %*	*Transition rate %*	*GER1 %*	*GNI/ Cap $*
Niger	13–19	1,686	108	1,578	6	9	3	31	40	200
Burkina Faso	13–19	1,951	199	1,752	10	14	5	36	44	300
Tanzania	14–19	4,831	279	4,552	10	11	1	17	69	290
Burundi	13–19	1,106	113	993	11	13	7	22	71	100
Chad	12–18	1,235	148	1,087	12			47	73	250
CAR	12–18	592	71	521	12	14			66	260
Mozambique	11–17	2,962	352	2,610	13	31	5	56	99	210
Madagascar	11–17	2,569	426	2,143	14			47	104	290
Rwanda	13–18	1,144	161	983	14	16	13	99	117	220
Mali	13–18	1,520	228	1,292	15	23		52	57	290
Uganda	13–18	3,253	571	2,682	17	21	8		136	240
DRC	12–17	7,183	1,292	5,891	18					660
Ethiopia	13–18	8,307	1,495	6,812	18	26	11	96	64	90
Angola	10–16	2,270	400	1,870	19	24	11			740
Senegal	13–19	1,472	263	1,209	19	23	12		75	550
Guinea-Bissau	13–17	129	26	103	20			63		140
Guinea	13–19	1,282	271	1,011	21	24		56	77	430
Liberia	12–17	457	105	352	23			75		130
Côte d'Ivoire	12–18	2,857	664	2,193	23	32		40	80	640
Zambia	14–18	1,203	283	920	24	37	15	44	79	380
Benin	12–18	1,085	287	798	26	35	13	58	104	440
Sierra Leone	12–17	588	156	432	27					150
Comoros	12–18	120	34	86	28	33	20		90	450
Eritrea	12–17	502	142	360	28	41	20	81	61	190
Nigeria	12–17	16,364	4,601	11,763	28			39	96	320
Equatorial Guinea	12–18	69	21	48	30	41	13		126	
Congo	12–18	471	197	274	32	42	17	91	86	100

Table 2: Countries in Sub-Saharan Africa, listed by GER at secondary level (UIS 2004)										
	Age range	*School age pop '000*	*Enroll-ed '000*	*Not Enroll-ed '000*	*GER2 2000 %*	*GER2 lower %*	*GER 2 upper %*	*Trans-ition rate %*	*GER1 %*	*GNI/ Cap $*
Kenya	13–17	3,317	1,251	2,066	32	37	25	75	96	390
Cameroon	12–18	2,496	836	1,660	33	29	38	27	107	640
Gambia	13–18	150	56	94	34	48	19	89	79	310
Lesotho	13–17	226	74	152	34	41	22	53	124	590
Malawi	12–17	1,367	488	879	34	49	17	82	146	170
Ghana	12–17	2,851	1,031	1,820	38	58	17	82	81	320
São Tomé and Principe	13–18	28	11	17	39	65	23		126	320
Togo	12–18	738	289	449	39	61		68	124	310
Zimbabwe	13–18	1,898	844	1,054	43	64	31		99	400
Swaziland	13–17	106	48	58	45	53	32	92	100	1,350
Gabon	12–18	171	102	69	51	63	32		134	3,580
Namibia	13–17	201	124	77	61	79	31	83	106	1,870
Cape Verde	12–17	60	46	14	66	96	50		123	1,490
Botswana	13–17	197	156	41	73	86	52	96	103	3,430
Mauritius	12–18	137	105	32	80	93	69	60	106	4,090
South Africa	14–18	4,743	4,142	601	86	101	77	92	105	2,780
Seychelles	12–16	7	8	-1	110	111	108		116	7,480

Table 3: The expansion needed to reach a GER2 of 50% and related recurrent costs					
Country	***Multiple of secondary enrolments needed to reach GER2 50% overall***	***Additional recurrent cost per annum at $100 per secondary student ($ m)***	***Country***	***Multiple of secondary enrolments needed to reach GER2 50% overall***	***Additional recurrent cost per annum at $100 per secondary student ($ m)***
DRC	2.8	470.5	Chad	4.3	36.4
Nigeria	1.8	355.2	Benin	1.9	34.9
Tanzania	5.0	192.1	Rwanda	3.6	28.0
Angola	2.6	168.6	CAR	4.2	18.1
Côte d'Ivoire	2.2	151.7	Burundi	4.5	13.6
Cameroon	1.5	81.7	Zimbabwe	1.2	13.0
Senegal	2.6	80.6	Malawi	1.5	10.3
Uganda	2.9	78.5	Togo	1.3	7.7
Madagascar	3.6	77.2	Lesotho	1.5	7.1
Ethiopia	2.8	74.2	Eritrea	1.8	6.4
Mozambique	3.8	73.5	Sierra Leone	1.9	6.4
Burkina Faso	5.0	72.2	Liberia	2.2	5.0
Guinea	2.4	49.3	Comoros	1.8	3.6
Kenya	1.6	49.3	Swaziland	1.1	2.2
Mali	3.3	47.8	Gambia	1.5	1.8
Niger	8.3	45.6	Guinea-Bissau	2.5	1.7
Ghana	1.3	39.1	Congo	1.6	1.2
Zambia	2.1	37.5	São Tomé and Principe	1.3	0.3

Figure 1: Framework of parameters influencing policy options on secondary participation					
	Public expenditure on Secondary as % GNP (x)	***Public unit costs as % of GNP per capita (c)***	***GER2***	***Implied commitment to secondary schooling***	***Possible policy implications***
1	Low	Low	Low	No priority	Increase % budget to secondary, allow unit costs to increase if quality is low and low unit costs are the cause
2	Low	High	Very Low	Low priority for mass access; constrained by high costs	Reduce public unit costs and increase budget for secondary
3	High	High	Low	Low priority for mass access; constrained by high costs	Reduce public unit costs to increase access
4	Low	Low	High	Poor quality and/or largely privately financed	Improve quality if low; consider access and equity implications of private funding if prevalent
5	High	Low	High	High priority	Quality may need improvement and unit costs may need enhancing

Shifting Targets: Why UPE is so Difficult to Attain/Sustain

Jonathan D Jansen[1]

Introduction

This chapter has three objectives. First, to trace briefly the recent history of target-setting as a transnational activity focused on universal primary enrolment or, in contemporary terms, 'Education For All'. Second, to explain why such targets are not achieved or achievable on a grand scale and third, to discuss what can be done against the backdrop of exemplary national initiatives.

Background

By 1990 there were more than 100 million children out of school, and the scene was set for a historic inter-agency[2] conference in Jomtien, Thailand in March 1990, to coin an agenda of 'Education for All' (EFA) driven by what was called 'an expanded vision of basic education'.

In Dakar in April 2000, the goal was re-set by the World Education Forum so that by 2015 'all children ... will have access to and complete free and compulsory primary education of good quality'.

Five months later, the United Nations declared another set of targets — the Millennium Development Goals (MDGs) — which brought into focus the reduction of poverty and included in their ambit two of the EFA targets.

What is striking about *the serial commitment to target-setting* is that each new landmark conference over the 15 years acknowledged that the

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[2] The sponsoring agencies were the World Bank and three UN entities, the UNDP, Unesco, and Unicef.

targets had not been met and then proceeded immediately to set another round of targets.[3]

The six dimensions of EFA targets[4]

- The expansion of early childhood care and development activities, including family and community interventions, especially for poor, disadvantaged and disabled children;
- Universal access to, and completion of, primary (or whatever higher level of education is considered as 'basic') by the year 2000;
- The improvement of learning achievement such that an agreed percentage of an age cohort (for example, 80% of 14-year-olds) attain or surpass a defined level of necessary learning achievement;
- Reduction of the adult illiteracy rate (the appropriate age-group to be determined in each country) to, say, half its 1990 level by the year 2000, with sufficient emphasis on female literacy to significantly reduce the current disparity between male and female illiteracy rates;
- Expanded provision of basic education and training in other skills needed by youths and adults, with effectiveness assessed in terms of behavioural change and impact on health, employment and productivity; and
- Increased acquisition by individuals and families of the knowledge, skills and values required for better living and sound and sustainable development, made available through all education channels including the mass media, other forms of modern and traditional communication, and social action, with effectiveness assessed in terms of behavioural change.

[3] For Africa, the business of target-setting dates back to the historic 1961 Conference of African States on the Development of Education in Africa, hosted in Addis Ababa in May 1961. Under section C of the final report, labelled 'Educational Targets', the conference recommended 'that the target for the long-term plan (1961–1980) ... [is that] primary education shall be universal, compulsory and free' and that the improvement of the quality of African schools and universities shall be a constant aim'. See Unesco, Final report of the conference of African states on the development of education in Africa, Addis Ababa, 15–25 May 1961, p.3.

[4] Unesco, 'The Jomtien decade' in *Global Synthesis, Education For All 2000 Assessment,* p.13.

The Six Dakar targets[5]

- Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children;
- Ensuring that by 2015 all children — particularly girls, children in difficult circumstances and those belonging to ethnic minorities — have access to and complete free and compulsory primary education of good quality;
- Ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes;
- Achieving a 50% improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults;
- Eliminating gender disparities in primary and secondary education by 2005 and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality; and
- Improving all aspects of the quality of education and ensuring excellence of all so that recognised and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.

The Millennium Development Goals (MDGs)[6]

Goal 2. Achieve universal primary education
Target 3. Ensure that by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.

Goal 3. Promote gender equality and empower women

Target 4. Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015.

And although problems in the conceptual and methodological basis for target-setting are consistently acknowledged, that measurement continues

[5] Unesco, *Education for All. Is the World on Track?* EFA Global Monitoring Report, 2002, p.13.

[6] *http://www.dfid.gov.uk*

unabated. In other words, having warned repeatedly about serious problems with the data, the data is used anyway to make very specific judgments about performance within and across highly diverse national states.

For Rosa Maria Torres from the University of Rostock in Germany, despite the prolific studies on EFA in the 1990s,[7]

> By the end of the decade ... there is a yawning gap between progress made and progress that should have been made to reach projected goals, or at least the two goals that were expressly set for the year 2000: universal access to, and completion of, primary education, and a reduction of the adult illiteracy rate to half of its 1990 level.

In a more measured account, the evidence from Unesco's research suggests that in Africa, eight countries had Gross Enrolment Ratios (GERs)[8] of less than 70%, 13 less than 100% and for 10 there was simply no data available.[9] Indeed, several African countries (14) with GERs of 100% or more — such as South Africa and Botswana — probably had attained this before and in spite of the Jomtien targets[10]. The authors of the EFA Global Monitoring Report record that:[11]

> ... more than 100 million children in the world are still deprived of access to primary education, while a number of countries are clearly not on track to achieve its universal provision. Some have actually been moving away from it. Nearly all out-of-school children live in developing countries, and a majority of them are girls.

Once again, the targets had not been met but this did not discourage or deter the target setters.

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[7] Torres RM, 'One decade of education for all: The challenge ahead'. Unpublished paper, 1999, p.15. The 2000 version is published in English by IIEP Unesco, Buenos Aires.

[8] The gross enrolment ratio (GER) is the total number of children enrolled in a schooling level, whether or not they belong in the relevant age group for that level. GER is expressed as a percentage of the total number of children in the relevant age group for that level.

[9] Unesco, *Education for All. Is the World on Track?, op. cit.*, p.46.

[10] Department of Education, South Africa. *Education For All Status Report,* 2002.

[11] *Education for All. Is the World on Track?, op. cit.*, p.44.

In Dakar in 2000, six targets were reaffirmed and reset, and the one of relevance to our argument is as follows:[12]

> ... ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and complete free and compulsory primary education of good quality.

In September 2000, the United Nations announced Millennium Development Goals (MDGs), and Goal 2, Target 3, concerns the achievement of universal primary education: '... ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling'.

The methodological fallacy in target-setting

Every research report on targets in education spends time warning about the methodological limitations of the research, the unreliability of the data, and the need for caution in interpreting results based on such data. The most systematic and comprehensive report on target attainment — the EFA Global Monitoring Report 2002 — spends considerable space warning about the problems of data in attempts to measure progress against EFA commitments:[13]

> The limitation of the coverage and reliability of data is a significant problem ... There is also an acute need to improve the availability and quality of much national data and their comparability with the pre-1997 Unesco database ... In addition, the information available to monitor aid flows to education remains open to considerable improvements in quality and coverage. If donor commitments and disbursements in support of EFA goals are to be monitored effectively, more efforts in reporting complete and consistent information are urgently required.

Some reasons for this 'significant problem' regarding the adequacy of data are provided in the same report:[14]

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[12] Unesco, *The Dakar Framework for Action, Education for All: Meeting our Collective Commitments*. Adopted by the World Education Forum in Dakar, Senegal, 26–28 April 2001.

[13] Unesco, *Education for All. Is the World on Track?, op. cit.*, p.26.

[14] *Ibid.*, p.23.

> Reliable information on the composition of aid to education is difficult to obtain because of underreporting and because a significant proportion of education aid straddles each of the sub-sectors and therefore cannot be allocated to just one of them.

It is not just poor measurement but it appears, no measurement on key aspects of the target-setting process — such as the resource requirements for reaching Education for All. In this regard, 'for some of the EFA goals the data are very weak or simply not available' leaving the field open to massive speculation so that, for example: 'the resource gap[15] in 2015 could be at least double the World Bank's estimate'.[16]

This, therefore makes it very difficult to make reliable judgments about the state of planning in EFA countries when consumers of such data are warned that:[17]

> Based on evidence that should be treated with the utmost caution, 22 countries ... are reported to be completing national EFA action plans by the end of [2002], although these are not necessarily plans that have been adopted by governments as the basis for budgetary allocations to the education sector, nor are they necessarily comprehensive in nature.

I want to suggest that the very practice of measurement has taken on meanings and significance well beyond the specific concerns it is supposed to illuminate. It is part of being modern, the pretence that we can be precise and exact in measuring our reality; it is part of our faith in measurement technologies, that we can with constant fine-tuning make at least 'informed judgments' about performance — the overwhelming problems notwithstanding. It comes from our quest for economy captured in 'smart' targets, defined as specific, measurable, attainable, relevant and time-bound. It is driven by our 'trust in numbers', the belief that the language of quantity can explain what happens far away.[18]

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[15] That is, the gap to be bridged in order to meet the set UPE targets.

[16] Unesco, *Education for All. Is the World on Track?, op. cit.*, p.21.

[17] *Ibid*, p.19.

[18] Porter TM, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton, New Jersey, USA: Princeton University Press, 1995.

But it is precisely this kind of pursuit that often leads to what Joel Samoff[19] calls 'the façade of precision' in data collection and measurement. In his Tanzanian study, Samoff demonstrates how the very process of collecting data — using enrolment and expenditure data — is deeply compromised by local and national politics, and yet the data make their way very efficiently into official reports of both the African government and the international agencies. In other words, under- and over-reporting on education statistics are not simply a consequence of local capacity and expertise: they are also part of an ensemble of complex practices at each level of the education system.

The conceptual fallacy in target-setting

It is not only the precarious claim to methodological exactness that bedevils target-setting; it is also widespread disagreement about what exactly is being measured. Once again, Unesco's key 2002 report on EFA monitoring is conscious of the range of interpretations that could be assigned to the Dakar or MDG goals for universal primary schooling. Do they mean:

- that all children in the relevant age-cohort should complete the final year of primary schooling by 2015?
- that all children should eventually complete primary schooling by 2015?
- that the school system must have the capacity to enrol all eligible primary children by 2015?
- that by 2015 all children should be able to join and complete primary schooling?

It would be easy, from a statistical point of view, to identify a particular conception of UPE, reduce it to indicator status, and then proceed with the measurement task. But here, once again, there is tremendous variation across countries and among agencies[20] in terms of the conceptual

[19] Samoff J, 'The façade of precision in education data and statistics: A troubling example from Tanzania', *Journal of Modern African Studies* 29, 4, 1991, pp.669–689.

[20] World Education Forum, Education for All 2000 Assessment: Funding Agency Contributions to Education for All, Dakar, Senegal, 26–28 April 2000.

parameters at stake. As has been well documented, concepts such as primary schooling or basic education not only hold variable meaning within various national states, they are also highly contested within the international donor community. An Oxfam study summarises the problem well:[21]

> International data-gathering in education is in a chaotic state. One reason for this is that the official definition of 'primary-school age' varies between countries (it is five to nine in Pakistan and seven to 13 in Zambia, for example). This problem is compounded by the fact that the internationally used range of six to 11 often does not conform to national ranges. Inevitable problems in data collection follow.

In addition, there are those who argue, for example, that the broader vision of basic education identified at Jomtien has been reduced to mean primary schooling — a veritable narrowing of the agenda[22]. More importantly, whose conception of UPE should take precedence? These are not simple measurement questions; they are deeply political and economic questions. The conception of UPE adopted has enormous implications for the budgets of developing economies and for the kinds of priorities that a particular country might have deemed important in the first place. And what does it mean to accept 'the indicators selected by the international community for the purpose of monitoring progress'?[23] Is it expected that whatever the accepted definition of UPE is within a particular country, this should be set aside in favour of the 'selected' indicator for purposes of monitoring? Since this is unlikely to happen in practice, why should a country pursue both conceptions? In other words, how a particular country defines a simple concept like 'basic education' bedevils attempts to measure across widely different national contexts what it means to achieve UPE.

It is this presumption that the international community and the measuring agencies can be precise about these concepts, and that centrally prescribed (or agreed) conceptual meanings translate downwards into the day-to-day national conceptions and practices across the 164 states that

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[21] Watkins K, *The Oxfam Education Report*. Dorset, UK: Oxfam GB, 2000.

[22] Torres RM, *op. cit.*, p.25.

[23] Unesco, *Education for All. Is the World on Track?, op. cit.*, p.55.

participated in the Unesco-driven target-setting enterprise — that constitute what I have called the conceptual fallacy in target-setting in education.

The organisational fallacy in target-setting

International target-setting exercises make the assumption that more than 150 countries in the world can readily change and reorder existing bureaucratic organisation and political priorities at the national level to fall in line with the new demands set for organisational behaviour. The business of targets cannot be pursued, however, without a significant re-ordering of national organisation. Targets are not simply numerical indices detached from organisational order; this is a major reason why targets are not attained. It also explains the frustration of monitoring and research teams, who note: 'If the expectation from the World Education Forum was that there would be a set of finely honed, comprehensive national EFA action plans by the end of 2002 … then that target has not been met.'

And where there are such national plans, 'These are not necessarily plans that have been adopted by governments as the basis for budgetary allocations to the education sector, nor are they necessarily comprehensive in nature.'[24]

My argument is that rather than interpret the non-attainment of action plans as the result of recalcitrant bureaucrats or unco-operative politicians, such outcomes might be better understood against the backdrop of organisational inertia within national states. That is, new international targets ignore, in my view, what happens inside countries in their day-to-day education planning and delivery functions. For example, targets are set outside of the routine planning frames or cycles of national governments; targets compete with multiple existing international agency targets, all of which assume more or less the same urgency as the new targets; and targets are often agreed to by political leaders with little buy-in from government bureaucrats required to meet the new technical commitments.

In short, the organisational fallacy in setting targets is to assume that there will be a natural and logical re-alignment of existing bureaucratic

[24] *Ibid*, p.19.

organisation and political momentum to meet the new set of internationally derived target demands. This is a mistake. It raises the question: why then do national states participate in such target-setting exercises in the first place?

Why states participate in target-setting actions

It is clear from interviews with the technical and political leadership of African states[25] that participation in target-setting by national governments is not driven by the same logic that appears to inspire international agencies and their measurement teams.

First, it appears that African states agree to target-setting because of the symbolic significance of participation in cross-national setting of performance standards. Such symbolic standing[26] has little or nothing to do with the actual achievement of such standards, but it is important to be seen to be 'part of the game', as one leader put it. This recognition that comes through being part of a global movement is much needed especially in marginal states; not to be part of the Education For All consensus is to appear to be out of line, illogical or even rebellious in the context of what appears to be a very rational and reasonable set of goals.

Second, many states seem to participate because of the political consequences of non-participation in cross-national target-setting exercises. Such consequences could be real in terms of both internal pressures as well as external sanction from powerful international agencies. It would conceivably be very difficult for a poor country to negotiate terms of support from international donors at the same time as it is seen to be outside of the EFA consensus.

And third, the financial benefit of participation in target-setting, even if progress is limited, stalled or reversed, further motivates participation in

[25] Here I draw largely on interviews with leadership in the Southern African Development Community, or SADC, region.

[26] I have written elsewhere about the ways in which political symbolism is contained and constrained within education policy. See Jansen JD, 'Policy as political craft: explaining non-reform in South African education', *Journal of Education Policy*, 17, 2, 2002, pp.199–215.

Education for All. Such material gains might under extreme pressure on national budgets contribute much needed resources. The promises of international agencies to leave no stone unturned in fighting for financial support for poor countries serve a very important mobilising function in securing the participation of developing countries — whether or not such support eventually materialises.

What target-setting does to education quality

It would be a mistake, however, to read this criticism of target-setting or the non-attainment of targets as implying that this ubiquitous industry does not affect education systems, especially in third world states. I would argue that target-setting in general, whether led by international agencies or initiated by national governments, leaves a powerful residue of effects on education systems and, in particular, on education quality within each country. Counting — and indeed accounting — have become much more than isolated technical activities and are better viewed as social and institutional practice.

When targets become a national or international preoccupation, there is the real danger — and there is emerging evidence to this effect — that the drive to attain such targets, at worst, does serious damage to the educational process, and at best, privileges the measurable.[27] A familiar example from national states has to do with standardised examinations.

In South Africa, the past few years have witnessed a strong governmental drive to enhance the end-of-school examination results, commonly referred to as matric or the matriculation examination, in the nine provinces.[28] Schools that under-perform are named and shamed through publication of their results in national newspapers. Provinces (responsible for schools) in turn face enormous pressure from below (parent communities) and from above (the national government) to improve the

[27] Gorard S, Rees G & N Selwyn, 'The conveyor belt effect: A re-assessment of the impact of national targets for lifelong learning', *Oxford Review of Education* 28, 1, 2002, pp.75–89.

[28] Jansen JD, 'On the politics of performance in South African education: Autonomy, accountability and assessment', *Prospects,* 31, 4, 2001, pp.559–570.

performance of the schools under their jurisdiction. Ultimately, individual learners find themselves under enormous pressure from school principals and teachers to perform adequately, leading to all kinds of dubious practices in the schools. Schools register students on lower grades within the standard to enhance average performance; schools hold back students in earlier grades to ensure that Grade 12 results are enhanced; schools divert students into subject streams that are perceived to be academically less challenging, and therefore likely to deliver better results; and schools refuse re-entry to repeaters rather than risk such students bringing down the school average. In the process, two things happen. First, the educational responsibility to deepen and extend learning opportunities is lost in a mad scramble to 'push-up' results that relieve schools, provincial bureaucracies and politicians from pressures for what is called accountability. Second, the educational responsibility to provide adequate resources through well-trained teachers and productive learning environments gives way to the preoccupation with outcomes or end-results — achieved at any cost.

Quantity, quality and outcomes

Even the most exhaustive and sophisticated studies on target-setting hold firm that targets (such as the MDGs) will not be attained — even with downward adjustments in ambitious expectations[29]. It might well be the result of the fact that 'in the final analysis, the targets against which we measure progress are the outcome of political consultations'[30] rather than school- and classroom-level deliberations on education quality.

Nevertheless, what remains at the heart of educational reform across developing countries is how best to achieve 'deep change' that alters not only the surface behaviours of education systems, reflected in cross-

[29] Sahn DE & DC Stifel, 'Progress towards the millennium development goals in Africa', *World Development,* 31, 1, 2003, p48. See also Lloyd CB & PC Hewett, 'Primary schooling in sub-Saharan Africa: Recent trends and current challenges'. *Population Council, Policy Research Division, Working Paper No. 176*, 2003, p.29.

[30] Sahn DDE & DC Stifel, *ibid*., p.48; and Roberts J, 'Millennium development goals: Are international targets now more credible?' Paper prepared for the International Conference on Education and Development, Oxford, 9–11 September 2003, p.3.

national targets, but also fundamentally disrupts the inertia that plagues pedagogy, curricula and assessment in third world education. To this end, targets — their conception and ambition — are unlikely to make durable changes to the quality of education in resource-poor contexts.

The major problem facing third world education is not simply access, but what happens to children once they get inside schools. In other words, a very positive numeric about GER often blurs the fact that 'opportunity to learn' might be less achievable than full enrolment. Parenthetically, in many parts of Africa (and indeed South Africa), attending school can be quite a risky business against the backdrop of violence in and outside the school environment. It is therefore admirable to note that there is some attention in the measurement and monitoring system of Unesco to capturing education quality and not simply headcount enrolments of those who attend schools.

What can be done?

Since the end of colonial rule in Africa, individual countries have shown spectacular success in boosting initial enrolments only to find such initiatives unsustainable or undone by civil war and state instability. Tanzania is an example. Other countries, such as South Africa, have gradually improved and retained high national enrolments even during years of conflict.

Yet there is no unconditional success story on the African continent with respect to the sustained achievement of universal primary education. But there is substantial research on the elements considered necessary, if not sufficient, for achieving and sustaining UPE in developing country contexts.

Research suggests that the active involvement of parents stimulates enrolment growth;[31] that quality improvements *inside* classrooms (such as child-centred teaching methodologies) retain those drawn into schools as a

[31] Therdikildsen O, 'Local government and households in primary education in Tanzania: Some lessons for reform'. *Centre for Development Research Working Paper 98*, 6 June 1998, Danish Institute for International Studies. Available on *www.cdr.dk/working_papers/wp-98-6.html*.

result of UPE initiatives[32]; and that significant financial and technical assistance from international donor countries is indispensable to kick-starting UPE in very poor states[33]; and that the abolition or targeted abolition of school fees — such as for girls — can more than double enrolments in a short period[34]. Of all these factors, recent research by the United Kingdom's Department for International Development indicates that the most crucial element in retaining students in schools has to do with the private costs of attending school.[35]

In response to the critical element of private and public finance in the achievement of UPE, Keith Lewin correctly states that 'the planning and implementation of such strategies needs to recognise both the quantitative and the qualitative implications of expansion'[36]. Lewin then lists five critical questions to which planners everywhere should respond if UPE is to be sustained 'beyond primary education for all':

- what are the sub-sectoral allocation patterns that are most likely to result in targets being achieved?
- how should efficiency gains be achieved that will allow expansion at affordable levels of cost without unacceptable diminution of quality?
- how can the cost recovery mechanism be profiled in order to allow expansion with more equitable participation that is pro-poor?

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[32] Siraj-Blatchford I *et al*, 'Supporting child-centered teaching under universal primary education in Kampala, Uganda', in Anderson SE (ed.), *Improving Schools Through Teacher Development: Case Studies on the Aga Khan Foundation Projects in East Africa*. The Netherlands: Swets and Zeitlinger Publishers, 2002, pp.117–136. See also Ssebbunga M, 'Quality of teaching in secondary education'. Paper presented at the first regional conference on Secondary Education in Africa, 9–13 June 2003, Kampala, Uganda. At *www.worldbank.com/afr/seia/docs_conf_0603.html*.

[33] Moulton J, 'Uganda: External and domestic efforts to revive a derelict primary school system', in Moulton J *et al* (eds), *Education Reforms in Sub-Saharan Africa: Paradigm Lost?* Connecticut, USA: Greenwood Press, 2002, pp.53–86.

[34] Watkins K, *The Oxfam Education Report*. Dorset, UK: Oxfam GB, 2000, p.186.

[35] Boyle S *et al*, *Reaching the Poor: The 'Costs' of Sending Children to School, A Six Country Comparative Study*. London, UK Department for International Development, 2002.

[36] Lewin K, *op. cit.*, p.3.

- to what extent are non-government providers willing and able to complement publicly subsidised schooling?
- how much development expenditure needs to be budgeted to service planned expansion and replenish stock?

There are no easy answers to these questions, and the research base on what makes UPE achievable and sustainable depends as much on the vagaries of a particular national context as it does on a particular set of strategies.

Lessons learned

It is important not to overstate what has been achieved in particular contexts and at particular times in the national history of UPE. At the same time, there are generic lessons worth specifying from the African vignettes with respect to UPE achievements.

First is the fact that serious political commitment at the level of national government is indispensable to such achievement. This means more than rhetorical commitments to vague goals, but tangible investments in realistic targets. In such contexts, targets play a valuable role in focusing bureaucratic attention on achievable goals; targets enable limited resources to be directed towards specific objectives; and targets generate a sense of governmental priorities in the context of multiple and competing demands on the finite resources of the state.

Second is the fact that multiple interventions aimed at the same target are much more likely to achieve UPE commitments than the deployment of any single factor. This means understanding the range of variables that act together to undermine or accelerate policy ambitions with respect to education for all. For example, it is not enough to broaden access to primary schooling without simultaneously ensuring that there is adequate physical space to accommodate the expected increase in learner numbers; that there are enough qualified teachers to stimulate learning in each classroom; that there are basic toilet facilities for boys and girls; and that there is basic nutritional support for learners in very poor areas of the national system.

Third is the fact that both direct *and* indirect costs act as buffers to increased enrolments. Simply declaring tuition waivers is not enough: the costs of school lunches, uniforms, travelling, and other indirect costs are often thought to be more powerful than formal fee requirements in determining enrolment rates in poor countries.

Fourth is the fact that the community of parents remains a crucial ally in building enrolments, given the strong cultural and economic pull-factors that draw children away from schools. In this regard, health is an increasingly powerful variable as HIV/Aids impacts on families and children.

Fifth is the fact that international donor partnerships might be invaluable in very poor countries and where a low baseline of primary participation rates might require wide-scale shifts in enrolments. Donor contributions are however seldom sustainable and this should be taken into account in national strategies for boosting UPE.

Final word

There remain constraining conditions in both international environments (such as the redirection of resources to wars) and national contexts (such as civil unrest) that will continue to make the achievement of UPE difficult. At the same time, there are several examples of states where the combination of political will, donor commitment, community partnerships, informed planning, and budgetary commitments demonstrate that at national, regional and local levels, UPE is not at all beyond the reach of developing countries.

Education Lessons: East Asia's Economic Transformation

John McKay & Greg Mills[1]

Education is the bedrock on which successful nations are built, particularly those populations skilled in the occupations needed most in the 21st century — notably engineering and information technology. The East Asian experience illustrates the positive combined effects of education, demographic change and improving gender equality.

The process

During East Asia's drive to industrialisation and higher levels of both growth and income, education played a central role. In South Korea, which is the most dramatic example of the rapid expansion of educational spending as a deliberate component of overall growth strategies, the expansion of school enrolments between the end of the second World War and 1975 was around 410% for primary schools, 709% for secondary schools, 1,287% in vocational high schools and 1,432% in higher education. Between 1970 and 1985, real expenditures per student rose by 355%, compared with 38% in Kenya and 13% in Pakistan. Thus, it was not only the number of students involved at various levels of the system, but also the quality and capacities of the graduates that was emphasised. There was also a deliberate effort, from the beginning of the process, to remove the gender gap in enrolments. Universal primary education was achieved by 1965, and in this regard the East Asian countries were well ahead of other developing countries at similar stages of development. As a number of writers have stressed, the extension of education to females had far-reaching and very positive effects for the development process.

The decision to place education at the very core of the development process in East Asia was, in part, based on some of the dominant cultural

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values of the region. Over much of the area, Confucianism remains a strong influence, although it has undergone some important modifications over the past few years. It remains particularly important in family life, especially in the practices of raising and educating children. In traditional Confucianism, the government and the state can only be entrusted to a moral and properly educated elite, and it is the nature of that education — rather than some accident of birth — that should allow access to political power. This belief in the importance of education was underlined by the influence of the Western missionaries who came to the region from the 19th century onwards. But it was the reassertion of earlier philosophic traditions after the 1960s that provided the cultural and popular basis for the massive investment in education and training as part of the East Asian 'miracle'.

But there was also a strong element of planning and deliberate social engineering in this emphasis on the importance of education. The integration of human resource development into the broader development agenda was achieved through five particular policy approaches:

- ***a strong human capital approach,*** which stressed the centrality of education and skills in all aspects of development.
- ***a clear relationship between planning targets for education and job creation.*** Thus supply and demand were never seriously out of synchronisation, avoiding both skills shortages and oversupply.
- ***restructuring and change are permanent features of life in a modernising economy.*** Once East Asia had embarked on its strategy of export-oriented growth, it was recognised that the constant upgrading of jobs and skills would have to be pursued.
- ***education is a key mechanism for economic and social mobility.***
- ***education has a key role in maintaining and creating national identity.*** These processes were important in cementing national determination to succeed and in legitimating the role of the government.

This close relationship between education and development in East Asia has inevitably meant that skills creation programmes have been modified frequently to reflect the changing needs of the evolving economy. In the early stages of industrial development, the emphasis was on the creation of a large and literate labour force that would be able to deal with the rather

simple demands of the labour intensive industries that emerged first. But even in this early stage, a number of commentators have argued, the presence of a well-educated labour force, both white- and blue-collar, gave these nations a decidedly competitive edge. This is partly because the nations of East Asia, as late industrialisers, were making use of techniques of what has been called 'industrial learning'. These methods were quite different from those used in Europe or even North America in their processes of industrial development and involved trying to catch up with the more advanced countries by acquiring (often by copying!), applying and improving already existing technology. This required specific skills, and those workers with a good education had a decided advantage. Even by the 1970s in Korea, for example, adult literacy had reached almost 100% and 75% of process workers had a secondary education. Similarly, managers in East Asia at this time were generally much better educated than their international competitors. Even in the early stages of development, the phenomenon of the university-trained engineer and manager became commonplace.

Unlike many other countries at similar stages of development, a major emphasis in all East Asian countries was on producing trained technicians, engineers and business managers, and this was generally conducive to the creation of a formidable capacity in manufacturing. Compared with countries such as India, there was far less emphasis on the education of lawyers and other professionals. Thus, there was no emergence of large numbers of well-educated but often unemployable young people, as was often the case in South Asia, North Africa and the Middle East.

This emphasis on technical education became even more marked from the 1970s onwards as all East Asian economies sought to upgrade their industrial capacity and move into higher value and more technically demanding products such as steel, chemicals and automobiles. In some cases, this meant that skills were needed to implement and upgrade the mature technologies imported from other countries, but increasingly there was an emphasis on the creation and constant improvement of homegrown technologies. This meant increasing emphasis on university education and, in particular, the expansion of postgraduate teaching and research. Significant government resources were put into the creation of special research centres and the fostering of advanced skills in science,

technology and engineering. This was particularly so in the 1990s, as East Asia endeavoured to move to a position of international leadership in a number of sectors and specialist products.

In South Korea, research and development expenditure by the universities was increased five-fold from 1990 to 1998 alone, and in the same period the number of university researchers more than doubled. One indicator of the success of this effort was that the number of scientific publications originating in South Korea increased dramatically: in 1998, Korea ranked 37 in the world in this area but by 1999 its position had improved to sixteenth. The onset of the Asian financial crisis in 1997, rather than hindering progress in the upgrading of Korea's labour and industrial capacity, resulted in even larger government investments. For example, the government set aside some $1.4 billion to upgrade the country's 12 leading research-oriented universities. The expectation was that these elite institutions would produce high-level graduates and also assist industry by establishing research centres and industrial parks to generate and incubate new technologies for companies of all sizes, including a significant number of small and medium enterprises.

Thus, in summary, it is important to recognise that East Asia derived enormous economic benefits from its emphasis on education, but this was also because there were strong efforts made to integrate plans for expanding and upgrading skills with those for the creation of new jobs. In other words, the supply and demand were never allowed to move too far out of balance. Also, strong efforts were made to adapt the education system to the constantly changing needs of the economy as it moved to newer and more advanced stages of development.

But it is important to recognise that educational investment has not just been devoted to science and technology. All of the East Asian countries have also placed great emphasis on citizenship, ethics and values, again reflecting the Confucian foundations of the region. In an era of globalisation, there has also been a concern that important features of national identity should not be lost. Significant efforts have been put into upgrading and expanding education in all of these areas. Certainly, some Western approaches and curriculum elements have been incorporated, but students have been encouraged to come to terms with their own past; to learn about the evolution of the dominant institutions in their societies;

and to develop greater self-awareness, something that many other nations could profitably emulate.

Unintended consequences?

Improvements in education had unintended consequences. The changing role of East Asian women in society in this equation is reflected in the elimination of the gap in education provided to boys and girls. A decline in birth rates has reduced the number of people who need to be educated in East Asia, which has in turn allowed for the provision of better-than-just-basic education, with a substantial increase in per pupil expenditure. A sufficient quality of labour coupled with investment in primary and secondary education proved a cocktail for success in Asia. A surge of highly trained young people entering the economy at the same time can provide the necessary kick-start. But in the longer term, this can bring down the rate of population increase, particularly where girls have been educated as extensively as boys and remain in the labour market. Labour productivity in manufacturing is also a critical element in GDP growth.

But a focus on education is not enough. Asia also managed a number of other reforms simultaneously, including:

- addressing the role and capacity of the state in creating the right conditions to attract local and foreign investors.
- fostering productive co-operation between government, business and community organisations to achieve national goals.
- recognising the need for domestic and regional stability and the absence of violent conflict.
- recognising the need for a sound policy and institutional framework.
- admitting the need for acceptable levels of government credibility — related to leadership and to policy.
- encouraging the commitment of leadership to popular welfare and a generally equitable distribution of the benefits of growth.
- understanding the need for a suitable and versatile technology accompanied by an appropriate mindset.
- appreciating the importance of export-led growth, which in turn has demanded a broader international focus in all aspects of the society.

Lessons for Africa?

The tendency is for many people to conclude that East Asia represents an unattainable level of success, something to which Africa could never aspire. But it is important to remember that East Asia also started from a very low base about four decades ago. In the early 1960s, following the devastations of the Korean War, South Korea had a per capita income that was significantly lower than almost every African country. The very large investments made in education were carefully staged and planned, so that the simpler and cheaper innovations of the 1960s generated national resources that could be re-invested later into progressively more sophisticated and expensive educational programmes. Some resources came as aid from overseas, especially in the very early stages, but most of the educational expansion was funded from national resources. Savings rates have always been high in this region by international standards, and this created funds for these national priorities. As incomes increased — and it is important to remember that East Asian development was relatively equitable, and thus incomes grew right across all segments of society — still larger savings became available for the next stage of investment. It is also important to recognise that individual families invested huge resources of their own in the advancement of their children, and increases in income also brought advanced education within the reach of virtually all citizens. In East Asia, at a family level and for the individual governments, it was recognised that education was perhaps the number one priority, providing the means of escaping from the poverty of the past. Through careful planning, investment in education was afforded because it was realised that it had to be — the alternative was unthinkable and its real costs were unacceptable.

In East Asia, the performing states of the 1990s had a number of factors in common: the elements of labour, capital and human resources as well as the ability to combine these effectively. The simple lesson from East Asia's economic miracle: No macro-economic policy can work without education and training.