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Financing Secondary Education in Kenya: Cost Reduction and Financing Options

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Abstract

The paper examines the financing status of secondary education in Kenya and explores possible cost reduction and financing options in the long term. Educational needs for secondary education in Kenya are on the increase since the introduction of Free Primary Education in 2003. Financing of secondary education continues to be a challenge to the government, parents and communities at large. Identifying sustainable financing options that maximize on cost-effectiveness in resource utilization is therefore critical. The study utilized secondary data obtained from education trend statistics, the 2003 Kenya school census, and the Teachers Service Commission. The education simulation and financial projection tool provided the basis for projecting both growth in secondary enrollments, resource needs, and financial implications of various policy options. Some of the insights



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from the study show that expenditure on secondary education as a proportion of GDP and the total education public budget averaged 1.6% and 22%, respectively. Public financing is predominantly recurrent, while non-recurrent expenditures are estimated at 6%. High-income quintiles benefit more from public provision and financing of secondary education compared to the low-income quintiles. Feasible financing options would therefore include increasing secondary education revenue and fiscal allocation on non-salary expenditures. Cost reduction measures should target the expansion of quality day schools, efficiency utilization of teachers, and streamlined procurements. The paper provides research findings and makes objective projections with a view to informing researchers, education managers and policy makers.

Keywords: Education finance; secondary education; Kenya.

Financiación de la Educación Secundaria en Kenia: Reducción del coste y opciones de financiamiento

Resumen

Este ensayo examina el estado de financiación de la educación secundaria en Kenia y explora posibles soluciones para la reducción del coste y opciones de financiamiento a largo plazo. Las necesidades educativas de la educación secundaria en Kenia han aumentado desde la introducción de la Educación Primaria Gratuita en 2003. La financiación de la educación secundaria sigue siendo un reto para el gobierno, los padres de familia y la comunidad en general. La identificación de opciones financieras sostenibles que utilicen al máximo la relación coste-rendimiento es, por lo tanto, un aspecto crítico. Los datos utilizados para este estudio fueron tomados de estadísticas sobre tendencias educativas, del censo escolar de Kenya 2003 y de la Teachers Service Commission. La herramienta utilizada para la simulación de la educación y la proyección financiera proporcionó la base para poder proyectar el crecimiento en matrícula en la escuela secundaria, las necesidades en cuanto a recursos y las implicaciones financieras de varias opciones de políticas educativas. Algunos hallazgos que se desprenden del estudio muestran que el gasto de la escuela secundaria como una proporción del Producto Doméstico Bruto y el total del presupuesto para la educación pública promedió 1.6% y 22%, respectivamente. La financiación pública es predominantemente recurrente, mientras que los gastos no recurrentes se calcula son un 6%. Los quintiles de ingresos altos son más beneficiados por la provision pública y el financiamiento de la educación secundaria que los quintiles de bajos ingresos. Por lo tanto, algunas opciones financieras viables incluirían el aumento a los ingresos para la educación secundaria y una asignación fiscal sobre los gastos no salariales. Las medidas de reducción de coste deberán fijar como objetivo la expansión de escuelas de calidad, eficiencia en la utilización del profesorado y una obtención de provisiones racionalizada. El ensayo informa sobre los resultados de la investigación y proporciona proyecciones objetivas con la vista puesta en informar a investigadores, gerentes educativos y hacedores de política.

Palabras clave: finanzas; coste; educación secundaria; opción; reducción; Kenia.

Introduction

The population of Kenya has gradually increased from 31.5 million in 2002 to 33.4 million in 2005, occupying a land area of 56.9 million hectares (Central Bureau of Statistics [CBS], 2006). The population is projected to increase to 36.9 million people by 2015 when the Millennium Development Goals (MDGs) are expected to have been achieved. Pre-primary, primary and secondary school age population was projected at 2.9 million, 7.2 million, and 3.3 million by 2006, respectively. By 2015, the respective school age population is projected to stand at 3.2 million, 7.9 million, and 3.8 million, respectively. About 80% of the population lives in the rural areas with agriculture and livestock being the main source of livelihood. The main religious groups include Christians, who are the majority, followed by Muslims and Hindus. The performance of Kenya's economy has been dynamic over the last four decades. Although in the 1960s and 1970s the economy grew at a high rate of 6 to 7%, the last two decades saw the country experience declining macroeconomic performance until 2003, when the country started to experience gradual increase in economic growth (Government of Kenya [GoK], 2006a). The Government of Kenya (2006a) also reports that real gross domestic product (GDP) growth rate rose from 0.6% in 2002 to 3.6% in 2003, 4.9% in 2004, and 5.8% in 2005.

Overall, the education sector receives the highest public spending allocations. In 2004–05 and 2005–06, the share of education expenditure to total expenditure was 27% and 26%, respectively (or 6.6% of GDP). The main education targets identified in the government development strategy include increasing primary net enrollment and completion rates to 100% by 2015 (net enrollment ratio was estimated at 83.2% in 2005, while completion rate was 67%), reducing regional disparities by increasing the enrolment ratio of North Eastern province to over 43% by 2007, improving internal efficiency in education by reducing dropout and repetition rates, and increasing primary to secondary transition rates to 70% by 2008.

Investment in education has both private and social returns. Secondary education, the focus of this paper, has been shown to make significant contributions to individual earnings and economic growth (International Bank for Reconstruction and Development [IBRD], 2005). IBRD (2005) further notes that secondary education is closely associated with improved health, equity and social conditions, in addition to promoting democratic institutions and civic engagement. In view of the foregoing, it is important for any country to encourage increased investment at secondary school education level.

In Kenya, education financing is based on the cost-sharing policy of 1988, which requires most costs in education to be met through partnerships between the public sector and Non-Governmental Organizations (NGOs), religious organizations, development partners, communities/individuals, and the private sector (GoK, 1988). Within this funding policy framework, the overall government role includes the professional development of teachers, teachers' remuneration in public institutions, provision of infrastructure, administration and management, and provision of bursaries and scholarships for needy students.¹ The responsibilities for other players include physical infrastructure development and maintenance; payment for tuition, public examinations, catering and accommodation in boarding schools, and post-school institutions; payment of school/college amenities (transport, water, energy and communication), student's personal expenses, and remuneration of school/college non-teaching staff. Coupled with rapid

¹ The Government of Kenya secondary school bursary program awards financial support to poor and vulnerable children who cannot get alternative support to finance their secondary school education.

education expansion, the policy has led to escalation of costs of schooling, especially at post-primary level of the school system, and increased pressure on the government budget over time (GoK, 2003a).

The policy makers are therefore faced with a challenge of ensuring that the youth access quality and affordable secondary education. In view of this, policy makers should strive to devise financing policies and strategies specific to Kenya's socio-economic and political context and taking into account external realities. Such policies and strategies need to be as inclusive as possible and protect households from any form of discrimination due to poverty, gender, ethnicity, location, and religion, among other considerations. The purpose of this paper is therefore to analyze secondary education financing strategies and options in Kenya.

Before Kenya became independent in 1963, secondary education was being provided along racial lines through European schools, Asian schools, and African schools. The European schools were more endowed with learning facilities while African schools, mostly attended by children of the pre-independence African elites, were few and had few facilities. Immediately after independence, all existing public secondary schools were categorized as either public unaided schools, public-aided schools, or National Schools (publicly-aided schools considered as centers of excellence). In addition, there were private schools that were being established. National Schools were better endowed with facilities and were mainly the former European schools—some of whom were high cost schools. In the last two categories, the government employed teachers and provided facilities through the Kenya School Equipment Scheme. The un-aided category was a community initiative (locally known as *harambee* schools), which was a reaction to social demand for secondary education. *Harambee* schools were established with an aim of expanding opportunities of access to secondary education, which previously were constrained by limited school places and cost of secondary education. Unlike other schools, most *harambee* schools were locally accessible in terms of distance and charged relatively low fees. The majority of low social class households took their children to these schools.

Unfortunately, *harambee* schools, which were seen as a panacea to the problem of access to secondary education, were perceived as providing low quality education. In the 1980s, the government intervened and began supplying teachers and learning equipments to all secondary schools except private schools, thus improving quality and partly financing community initiatives. The schools were re-categorized as district, provincial, and national schools. The majority of former *harambee* schools (most of them day schools) became district schools. At the same time, a cost-sharing policy was introduced where the government was mainly to provide teachers and other essential learning resources while the communities were to finance school infrastructure and meet most of the recurrent expenditure. This was a welcome move in terms of improving the quality of secondary education, but it did not adequately address the problem of access to affordable secondary education. This made the government to embark on a bursary (or student-aid) program targeting the vulnerable groups. However, the bursary program was inadequate, given the growing number of school-age population. In the 1990s, which was characterized by the shocks created by structural adjustment programs and the onset of market liberalization, government participation in the provision of secondary education became limited to paying teacher salaries due to budget cuts. In addition, fewer schools were being constructed while there was widespread poverty and increased school withdrawal, yet the school-age population kept increasing.

After the year 2000, the government seemed to be more determined to expand opportunities of access to affordable secondary education. This was due to increased social demand for education and a realization that the Free Primary Education program (introduced in 2003) is likely to push the demand for secondary education even much higher. Such determination is manifested through an increased budgetary allocation to secondary school bursary funds from US\$ 11.5 million in 2003–04

to US\$ 13.8 million in 2004–05 (GoK, 2006b). Despite the increased budgetary allocation, the literacy rate is relatively low. The adult literacy rate stands at 84% although the secondary school enrollment rate was about 29.3% in 2005 (GoK, 2006c; United Nations Development Program [UNDP], 2005).

The provision of secondary education has changed markedly since independence, with an expansion from 151 schools and 30,000 students in 1963 to 4,197 schools and 928,149 students in 2005 (GoK, 2006c). However, the growth has not been sufficient to improve participation ratios due to faster growth in the school age population. For instance, between 1989 and 1999, the inter-censal increase in the population of 15–19 years of age was 43%, from 2,378,695 to 3,403,178 (GoK, 2005a). In 2006, the secondary school age population (14–17 years) is estimated to be 3,228,801. Despite the concerted efforts, secondary education faces several challenges, including low enrollments, low transition from primary to secondary (50%), and a low pupil-teacher ratio of 19:1 (GoK, 2006c). In addition, the internal efficiency of the school system is low, with about 20% of students enrolling in standard one (or the first grade of primary school) completing secondary education. In 2003, the dropout and repetition rates in secondary school averaged 7% and 6%, respectively.

Benavot (2006) describes the transitions that secondary education has undergone in the world. For instance, in some countries, secondary education has been demarcated into lower and upper secondary whereas other countries such as USA have a comprehensive secondary education, a feature that reduces the elitist nature of secondary education as espoused in some countries. As countries strived towards the achievement of universal primary education, the demand for secondary education has been increasing. This has forced countries to carry out reforms in the secondary education system so as to improve transitions from primary to secondary schools. For instance, Benavot (2006) notes that in the wake of the reform initiatives, several basic types of secondary education system emerged. For example, in the Scandinavian countries (Norway, Denmark, and Sweden), primary and middle schools were joined into a nine-year basic and compulsory program. It is also noted that Great Britain, France, and Italy reformed and adopted a mixed secondary school system.

The African countries first experienced educational systems that were racially divided. Elitist secondary school systems thrived in such an education system. As Benavot (2006) notes, even after independence, few governments altered the systems that were in place during the colonial period. Secondary education continued to be accessible more to the elites. Examinations continued to be the measure of transition from primary to secondary schools. This is a system that Kenya inherited from Britain, from which it became independent. The education system limited the chances of many children enrolling in secondary school. Benavot alludes to the fact that access to secondary education can be improved if secondary school systems are expanded. For instance, enrollment ratios in the United States increased from 7% in 1890 to 80% in 1960s after the country adopted a comprehensive free secondary education.

Education is viewed as the root source of human, social, cultural, and economic capital and is perceived as legitimate in terms of both individual and collective good, resulting into explosive growth both in national and global arena (Meyer, Ramirez, Frank, & Schofer, 2005; IBRD, 2005). This, however, is associated with considerable levels of financing, improved organizational and delivery structures. Lack of adequate financing, institutional structures, and effective delivery systems have been associated with low participation rates observed in developing economies. The diversity of funding sources and efficiency enhancing measures are therefore required to cover the significant financial investments for expanding access and improving the quality of secondary education (Gropello, 2006; IBRD, 2005). This also requires the countries to put in place cost-sharing strategies and to complement supply-side interventions with demand-side financing mechanisms.

For instance, although public-private sector funding is expected to constitute a greater share of funding, families and communities should play an important role in financing secondary education. Other demand-side and supply-side mechanisms include use of vouchers and scholarships targeting students from poor households, girls and minority communities, reducing cost of secondary education; improving efficiency in utilization of existing resources; and balancing the ratio of per-student public spending across the three levels of education (Gropello, 2006; IBRD, 2005).

According to Fuller, Elmore, & Orfield (2007), education systems are full of choices, some of which occur when parents use their knowledge, skills, and social connections to have their children in certain schools and or programs. The choices made are influenced by the parents' ability to meet the costs of the program and or the fees charged in the selected schools, among others. From empirical literature, they draw two important conclusions on the policy implications of educational choice. First, increasing educational choice is likely to increase social separation by race, social class, and cultural background. This has implications for Kenya in that parents are able to make an educational choice based on their ability to pay for educational services. Second, greater choice in the public education systems occurs after deliberate efforts to gain strong educational improvement measures in order to increase variety and performance. Again, such improvement measures such as increasing the quality and quantity of instructional materials require increased financing by parents and governments. The implication for Kenya is that educational choices, though desirable due to their effects on variety and performance, have varied financial requirements.

Successful education systems go through a sequence of policy choices. For instance, in South Korea, free compulsory primary education was introduced in 1954 and gradually rolled out over a 6 year period (Bregman & Tallmeister, 2002). This initiative was financed by an introduction of the Education Tax Act of 1958 and foreign aid. This led to a sustained increase in enrollment of over 95%. In 2002–03, net enrolment rate was 88%. During this period, the education budget focused on primary education. Consequently, the operation of secondary and tertiary education had to rely on private resources, such as tuition fees. A similar situation is happening in Kenya since 2003 when free primary education was introduced, with the bulk of the education budget going to this sub-sector. As a result, parents, communities, and philanthropists are financing secondary education through payment of user charges (Ngware, Onsomu, Muthaka & Manda, 2006).

In South Korea, the achievement of targeted high enrollment ratios in primary education led to competition for entrance into secondary schools in general, and entrance into elite schools in particular became so intense that grade repetition and private tutoring soared and quickly became a serious social concern (Bregman & Tallmeister, 2002). Secondary education was not well prepared to absorb the increased social demand for this level as it lacked resources to finance the required expansion. The public challenge, therefore, was to expand the secondary education system equitably. As the World Bank (2005) notes, the South Korea government responded in two ways. One response was removing the barriers of student flow such as middle school entry qualifications. The second response was by increasing capacity at secondary schools through public financing and privatization. Public financing focused on infrastructural and teacher provision. Another characteristic of the South Korea secondary education system that is relevant to Kenya is the dual system where students make educational choices to follow either an academic (general) system or a vocational and technical training system. Kenya is finding itself in a situation that was similar to that experienced by South Korea in the 1960s. The demand for a more equitable secondary education system with an enhanced transition from primary to secondary education is increasing with the onset of free primary education, and the Korea education system provides some useful experiences (Ngware et al., 2006).

Literature

Financing secondary education is important as it constitutes an investment in education that yields considerable social and private returns. In Africa, there are four critical reasons for investing in secondary education (Bregman & Tallmeister, 2002; IBRD, 2005): First, secondary education is crucial for economic growth and development. Technological change in the 21st century has made knowledge essential for competing in the world markets. Secondary education therefore provides countries with the human capital needed for economic growth. In addition, it provides a link between primary education and further learning and training of professionals such as technicians, scientists, and entrepreneurs.

Second, secondary education contributes to the socialization process of young people among them youth who are at risk. Secondary school's age-group (adolescence) has the greatest potential for changing its behavior, as secondary education can be decisive in enhancing positive social values among the youth. Third, secondary education provides private returns and offers young people the opportunity to acquire human capital unlikely to be developed in the lower grades. This in turn enables the youth to develop job-oriented skills, participate fully in society, take control of their own lives, and continue learning. Finally, the demand for secondary education is increasing rapidly. The World Declaration on Education for All (EFA) in 1990 pushed many African countries to increase access to primary education. The increased enrollments in primary schooling should continue to secondary education.

While the extent of public and private expenditures on various levels and types of education and training provides an indication of *de facto* priorities, it does not indicate the rationale for those priorities. The decision to spend on education is influenced by the society's and individual's socio-economic and political goals. The social and political goals include increasing levels of education and training to improve public awareness of national issues, efforts to preserve existing social orders, the desire to reduce inequalities of access, and concern to reduce population growth rates, among others (Bray, 2000). Of relevance to this paper are the economic goals.

The dominant school of thought on the role of education, including secondary education, on economic development is that it is an investment in human capital (Gropello, 2006; IBRD, 2005; Manda, Mwabu & Kimenyi, 2002; Mingat & Tan, 1996). The contribution of education to economic growth has been assessed through many ways. The relationship between enrollment ratios and the level of Gross National Product per capita and the relationship between per student educational expenditures and per capita income are such common ways at the macroeconomic level (Bray, 1998; LeBel, 2000). At the microeconomic level, rates of return to investment in education provide additional evidence of the economic productivity of education. In this context, it is possible to calculate rates of return from investment in secondary education. The work of Psacharopoulos (1994, 1995) is well known in this domain. In Kenya, the private rate of return to secondary education (17.2%) is relatively high compared to that of primary education (7.9%), though lower than that of university education (32.5%). A study of 35 African and Organization for Economic Co-operation and Development (OECD) countries shows that one unit increase in the primary enrollment ratio contributes to approximately US\$21 of additional Gross National Product. Comparable results were observed for secondary and higher education. The same study showed that a one-unit increase in per capita expenditure on education resulted in an overall increase of US\$3 in per capita Gross National Product (LeBel, 2000).

In some African countries today, secondary education is in a state of crisis. While quality, access and curricular reforms continue to serve as an ongoing source of public policy debate, educational policy makers are confronting increasing constraints in allocating scarce educational

resources to meet present and future levels of social demand for education (LeBel, 2000). The current situation is characterized by the education sector's increasing claim on household and public sector resources against a backdrop of widespread poor economic growth, mounting international debt, and rapidly growing populations whose demand for education cannot be met readily by traditional means of financing.

There exists abundant literature on financing education showing that African countries, Kenya included, are faced with three basic policy options for addressing the resource needs for secondary education and indeed all other levels of education (IBRD, 2005; LeBel, 2000; Lewin & Caillods, 2001; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2006). First, a country needs to consider whether to retain and sustain the baseline or existing financing scenario. This includes maintaining existing institutional frameworks and allocating piecemeal (almost static) levels of educational resources to an ever-growing secondary school age population. Such an option may not be sustainable, as it will reduce the effectiveness of the schooling received in the long term. In any case, this alternative is not only unfavorable among educational planners, but it also limits the achievement of a country's social and political goals. In Kenya, allocating static levels of education resources in the past led to increased technical inefficiency in form of drop outs, low enrollments, and reduced quality of secondary education.

Second, a country needs to consider whether to raise the share of allocation of resources to secondary education based on an expansion of existing schools and programs. This will enable the system to maintain education quality standards to be received by an increasing secondary school age population. However, such an alternative requires an expansion of the education resource base either domestically or through external resources. Alternatively, a trade-off between the allocation of educational resources and other competing claims or sectors to those resources may be necessary. This assumes that the other claims or sectors can be contained with reduced allocations. This may not always be the case. To expand the resource base requires broader domestic policy reforms geared at increasing economic growth with a view to generating more public resources and improving the efficiency of public service delivery.

Third, closely related to the second option, a country may consider structural reform in secondary education. Structural reform in secondary education is meant to improve the economic efficiency in service delivery and therefore enable the system to respond to the growing school age population with a relatively limited education finance base. Areas normally targeted for efficiency improvement include curricular reform, teacher utilization, improvements in the quality of educational inputs, decentralization of management, and a shifting of some of the financing burden away from the public to the private sector through programs of cost recovery and encouraging private sector investment in secondary education (Gropello, 2006). Given these options, economic choices have to be made within the existing policy environment. A zero option (maintaining status quo) may lead to serious decline in the quality of secondary education and thereby compromise sustainable economic growth. It is therefore imperative to make a choice among these alternatives, though none of the options is easy to implement and may require both political and technical support.

In this paper, Kenya's basic education financing options are examined from an economic perspective using an educational simulation model. The various alternatives proposed have been examined relative to the existing policy. An important emerging analytical consideration is whether to try to obtain more funding for education in general, and for secondary education as opposed to other levels, or to concentrate on increasing efficiency. There are two criteria for making this decision: whether finance authorities, political establishment, and other high-level decision makers perceive secondary education as a credible and efficient spender; and whether the education sector and the secondary education sub-sector in particular spends reasonable amounts as measured against

some defensible benchmarks (IBRD, 2005; Lewin & Caillods, 2001). It is from the foregoing background that the paper examines the financing options and cost reduction strategies within the secondary education sub-sector in Kenya.

Methods

The study used a policy simulation model, relying on secondary data obtained from the 2003 school census, the Teacher Service Commission (TSC) data covering about 4,000 secondary schools, and education trend data from the Kenya Ministry of Education. The Education Policy Simulation and Financial Projection Model is used to project secondary education expansion and associated financial resource needs for the period 2005–2010, using 2003 as base year.²

The underlying policy assumptions includes increasing primary school completion rate and government target of increasing primary to secondary transition rate from 47% in 2003 to 70% by 2008. To a large extent, dropout and repetition rates are expected to decrease over the projection period following implementation of various interventions aimed at reducing costs of education while improving access, equity, and quality (GoK, 2005b). The rate of growth in private education enrollments in each year is an assumed external parameter whose value is chosen externally and is targeted at 13.5% after 2005. The teacher attrition rate is estimated to increase from 2.8% in 2003 to 3.3% in 2005.

Assumptions are made on teacher deployment at secondary school level based on a curriculum establishment supported with significant efficiency measures of increasing the Average Teaching Load from 18 hours per week (27 periods) to 20 hours per week (30 periods) and thereafter to 23 hours (34.5 periods) and 25 hours (37.5 periods per week). Under the Curriculum-Based Establishment (CBE) system, secondary school teachers in Kenya teach at least one subject of their specialization in a designated school.³ To a large extent, most teachers are trained in two (or sometimes one) subjects either at the diploma or degree level. There is also provision for administrative duties, with employment of more teachers under Full Time Equivalent (FTE) terms. Full Time Equivalent covers time taken for administrative duties by school principals, their deputies, and heads of departments.

To project teacher salaries, first we disaggregate the number of teachers in secondary schools since 2003 by the official teacher professional categories. The disaggregation is based on estimated proportions from the 2003 School Census and TSC data returns where census data were not available. Unit salary scales for the period 2002–03—2008–09 constitute the annual mid-point salary scale for each job group as per the Kenya National Union of Teachers and Government Salary Agreement of 1997, reviewed in 2002–03 for implementation between 2003–04 and 2008–09 (6 years). Teacher salary raises for the period after 2008–09 are projected at 4% to cover inflation. Under the scenarios aimed at improving physical infrastructure utilization, the study adopts the

² The Kenya Education Simulation and Financial Projection Model (EdSim) was developed within the Sector-Wide Approaches process in Kenya in 2004/5. It focuses on establishing a demand-based financing framework that integrates resource requirements with agreed educational standards and policy objectives. It is based on core underpinnings of access, equity, quality and efficiency in resource allocation and utilization. Currently the model covers primary and secondary school sub-sectors.

³ The term Curriculum-Based Establishment refers to an approach used by the Teachers Service Commission in Kenya to deploy secondary school teachers to schools based on the teacher's areas of specialization and type and number of subjects offered by a school, and the weekly number of lessons that are supposed to be taught in a subject as provided in the school syllabus.

reviewed secondary school class-size policy on increasing class size from 40 students per class to 45 students. Other assumptions include the government requirement that each public secondary school should expand to at least three tracks per grade. These two parameters enable computation of the number of classrooms required to attain some of the above policy targets, such as 2008 target of a 70% transition (or continuation) rate from primary to secondary education.

The main weakness of these datasets, though, is the fact that some schools may not have been captured during the 2003 school census and school returns, resulting in automatic elimination from the dataset. The data also has low coverage of private schools from non response, including unwillingness of private proprietors to disclose information. Thus, the final dataset used in the analysis consists of approximately 4,000 public and private schools. Education trend data on enrollments and teacher numbers were available by district, provincial and national levels, while financing data consisted of national budgetary allocations disaggregated by economic and functional classifications.

Findings

Trend analysis on financing secondary education

In 2004–05, expenditure on secondary education as a percentage of GDP and total education budget was 1.6% and 22%, respectively. Public financing is predominantly recurrent expenditures (93.5%), while the proportion of secondary non-recurrent expenditures including bursaries (student aid) was estimated at 6.5%, implying high household financing mainly through user charges. The key components for secondary education financing by the government include teachers, physical infrastructure and bursaries. Except in private secondary schools, public financing is mainly through bursaries and teachers' salaries while households finance other operational and capital investments through user charges.

Table 1 indicates that, between 2000–01 and 2004–05, education expenditure as a proportion of GDP rose by 19.7%. At the same time, including expenditure on salaries, public expenditure on secondary education as a proportion of total expenditure on education declined by 8.8% during the same period. On the other hand, public secondary school enrollment increased from 26.9% to 29.5% (Table 1), an average growth rate of 9.7% over the same period. Three policy implications emanate from this observation: First, the evidence suggests that slowed expansion of secondary school education and negative impacts on quality of education are due to under-funding. Second, despite increased public funding to education, the secondary education level is not a priority funding area. Third, consequentially, and in an attempt to close the gap, there is a shift towards household and private sector financing of secondary education in Kenya. While such a shift may be desirable where income distributions are relatively equal, income distributions in Kenya are skewed in favor of upper income brackets. The net effect is low participation of lower income brackets in secondary school education.

Table 1

Secondary education spending as a percentage of GDP and education budget, and gross enrollment ratio (GER), 2000–01 to 2004–05

Variable	2000–01	2001–02	2002–03	2003–04	2004–05
Education spending as % of GDP	6.1%	6.1%	6.6%	6.6%	7.3%
Secondary spending as % of GDP	1.4	1.7	1.7	1.5	1.6
Secondary spending as % of education spending	23.8	28	25.3	22.7	21.7
Secondary salaries as % of education spending	22.4	26.8	24.2	21.1	20.3
Secondary non-salary as % of education spending	1.4	1.2	1.2	1.5	1.4
Secondary GER	26.9	27.5	27.6	29.2	29.5

Gross enrollment ratio (GER) is a UNESCO measure of all enrollment in an education level divided by the age group considered appropriate to that level. GER underestimates age-specific enrollment for students who are enrolled at levels below that considered typical (e.g., 16 year olds enrolled in primary education) and overestimates age-specific enrollment when students in a level are over the age considered typical.

Table 2 shows that secondary education comes a distant second after public expenditure on primary education. While it is important to maintain high levels of expenditure on primary education, partly due to its positive equity implications and high social returns, it is imperative to enhance public expenditure on secondary education with a view to increasing enrollments at this level.

Table 2

Percentage of public education financing by sub-sector, 2000–01 - 2005–06

Category of spending	2000–01	2001–02	2002–03	2003–04	2004–05
Primary education	54.0%	51.4%	49.4%	56.6%	55.5%
Secondary education	23.8	28.0	25.3	22.6	21.4
University education	12.3	12.1	11.3	10.9	12.3
General administration & planning	7.0	5.4	11.5	6.7	8.0
Technical education	1.6	1.7	1.4	1.6	1.8
Miscellaneous services	0.5	0.5	0.3	0.3	0.4
Teacher education	0.3	0.3	0.2	0.5	0.3
Schools for students with disabilities	0.2	0.2	0.2	0.2	0.2
Early childhood education	0.3	0.4	0.3	0.5	0.04
Total	100.0	100.0	99.9	99.9	99.94

Due to rounding error, the totals may not sum to 100%.

Table 3 shows the secondary education expenditures by spending category. Personnel costs take up at least 93.5% of secondary school expenditures, leaving only 6.5% for development, bursaries and other recurrent expenditures. The number of teachers and teacher quality alone are not known to increase enrollments, though they contribute to student achievement. If such a pattern of distribution of resources available for secondary education continues, the sub-sector will experience

a decline in enrollment ratios in future. To avoid such a situation, it is imperative for policy makers to devise financing options that would either increase the overall real public allocations to secondary education and or shift more secondary education resources to non-salary expenditures while containing trade unions who are sensitive to cutbacks in compensation.

Table 3

Percentage of secondary education expenditures by category

	2000–01	2001–02	2002–03	2003–04	2004–05
Personnel	94.0	95.6	95.4	93.3	93.5
Bursaries and grants	6.0	4.4	43.0	58.0	5.6
Development	0.0	0.0	3.0	9.0	1.0

Cost sharing policy

The decline in the share of public expenditure on secondary education is consistent with the late 1980s introduction of cost sharing policy in the provision of public services. The main aim of the cost sharing policy was to reduce the cost burden on the government while ensuring cost effectiveness in the utilization of educational facilities, equipment, materials, and personnel, with a view to maintaining the growth, quality, and relevance of education and training. Table 4 shows a clear distinction between the Government financing responsibilities and those expected of its partners. In addition to cost sharing in the public system, partners (especially NGOs), communities, and the private sector are expected to continue providing education and training at all levels, including pre-primary education, technical education, informal education, and tertiary education.

Table 4

Role of education stakeholders in Kenya

Responsibilities for Government of Kenya	Responsibilities for stakeholders and partners in education
<ul style="list-style-type: none"> • Provision of grants for specialized equipment (for science and practical subjects) in marginalized secondary schools • Professional support: Curriculum development, teacher education, inspection and public examinations • Administration and management, and bursary and scholarships for needy students • Teacher remuneration in public institutions • In-service training—e.g., Strengthening of Mathematics and Science Subjects (SMASSE) 	<ul style="list-style-type: none"> • Provision and maintenance of facilities, equipment and instructional materials in public and private secondary schools • Fees for public examinations • Catering and accommodation in boarding schools and post-school institutions • School amenities (transport, water, energy and communication), and student personal expenses • Remuneration of school/college non-teaching staff and temporary teachers

On average, the household funding of secondary education contributes 60% while government financing contributes 40% of the aggregate secondary financing (see Table 5). To a

large extent, implementation of the cost sharing policy at secondary school level gives leeway for schools to charge high fees compared to the fees guidelines provided by the Ministry of Education. Thus, secondary education has continued the burden on households despite the already high levels of their contribution. The average annual secondary school fee guideline from the Ministry of Education for the year 2005 was approximately US\$ 285. This is about 63% of per capita Gross Domestic Product in Kenya. In a society where more than half of the population lives on income of less than US\$ 1 per day, far fewer households will afford to spend almost two-thirds of the annual income to educate one child in a secondary school.

Table 5

Public and household secondary education contributions as a percentage of spending, 2003–04

Sub-sector	Public schools		Private schools	
	Government	Household	Government	Household
Early childhood	5%	95%	0%	100%
Primary	80	20	0	100
Secondary	40	60	0	100
Technical, industrial, etc.	25	75	0	100
University	92	8	0	100

Source: Government of Kenya (2005c)

Faced with competing social needs, a household has to make a choice at various levels of consumption. First, in most poor families, education comes a distance fourth after basic needs such as food, shelter and clothing. Second, in Sub-Saharan Africa, large family sizes are common. The total fertility rate in Kenya is estimated at 4.9 (CBS, 2005). Households are therefore faced with a choice between paying school fees for younger children or older children and a choice between education for boys or girls. Third, households have to choose between different levels of education. While primary education appears to be a preferred choice due to its low cost and heavy public subsidy, access to post-primary education for low income families is limited by their meager disposable income, provision of bursaries, family support, and expected returns of such kind of education to the immediate family.

Secondary education financing sources in Kenya

The main sources of secondary school funding in Kenya include households and the government. Other sources of funds include private sector, religious organizations, communities, Non-Governmental Organizations, and development partners. Public resources mainly fund teachers' personnel costs and bursaries while households meet costs for provision of supplies and equipment, operations, maintenance, repair, and physical infrastructure. During the 2004–05 financial year, for instance, out of the total US\$ 247 million allocated to the secondary education sub-sector, 93.5% was spent on salaries and 6.5% on non-salary inputs. The private sector provides secondary educational services at market prices and controls about 5% of the secondary school market share.

While these sources have contributed greatly to the development of the secondary school sub-sector, they suffer from a number of limitations. Like other public-financed programs, secondary education financing is subject to effects of macro-economic forces since the government resource availability largely depends on economic performance and resource availability. In Kenya,

as is the case in many other developing countries, social policies have to comply with development partner and donor policy priorities. At the moment, public, development partner, and donor funds for education are inclined towards primary school education. Widespread poverty decreases the capacity of households and communities to finance education projects. Bureaucratic and administrative considerations keeps public funding for secondary education in a negotiated environment, not necessarily reflecting demand for this level of education. Coupled with macroeconomic constraints, the observed resource allocation inequalities in the distribution of public education resources have resulted in low growth in enrollment and the number of secondary schools, particularly in areas dominated by poor communities.

Projections on secondary education expansion and financial resource requirements

To explore an appropriate mix of financing options using basic malleable inputs, secondary education enrollment and resource requirements in the medium term are projected under three policy scenarios: a baseline scenario, a medium efficiency scenario, and a high efficiency scenario. The projections include requirements in terms of teaching resources, classrooms, bursary allocation, and private secondary education provision. Under all scenarios, except the baseline scenario, the primary-to-secondary transition rate is targeted at 70% by 2008.

The results of the simulations shows that if the transition into secondary school is raised from 47% in 2003 to 70% in 2008, the gross enrollment ratio (GER) will increase from 27% in 2003 to 60% by 2009. Similarly, the cost of secondary education will increase by a factor of 1.04 over the same period, on the assumption that GDP grows at an increasing rate in real terms and resources are efficiently used. Enrollment is expected to increase from 0.845 million students in 2003 to 2 million students in 2008 and 2.7 million students by 2015. The substantial increase in enrollment can be attributed to improved primary school education (or internal efficiency gain) following recent interventions under Kenya Education Sector Support Program (KESSP) and the impact of the Free Primary Education program introduced in 2003.

The baseline scenario maintains the current levels of secondary service utilization levels. In this model, the primary-to-secondary transition rate is increased gradually from the current level of 47% to 60% by 2008. The scenario maintains a class size of 30 pupils per class and teacher utilization of 18 hours (27 periods) per week, while the bursary allocation is assumed to increase at the level of secondary enrollment growth rate over the projection period. Private secondary enrollment is maintained at the current rate of 8%. Although the education targets are held constant, costs remain high due to inefficient utilization of teaching and capital resources and the need for physical infrastructure expansion. Consequently, as public enrollment increases from 775,564 students in 2003 to 1.7 million students in 2010, the number of teachers required is expected to rise from 46,721 to 90,779 while the number of classrooms is expected to increase from 22,914 to 54,467 over the same period.

The baseline scenario shows that inefficient utilization of teachers at secondary school level is one of the main factors contributing to the high public cost of secondary education in Kenya. Currently, although secondary school teachers are expected to teach 18 hours (27 periods of 40 minutes each) per week, the average teaching load is 15 hours (GoK, 2005b). By implication, a smaller number of teachers could have been required (37,767 teachers in 2006 if Average Teaching Load of 18 hours is achieved). The medium and high efficiency scenarios present options of increasing efficiency in teacher utilization. First, teaching load is simulated at 20 hours, then 23 hours and 25 hours per week.

Under the medium efficiency scenario, the primary-to-secondary transition rate is expected to increase to 70% by 2008. Teaching load is expected to increase to 20 hours and 23 hours per week, while class size is expected to increase to 45 students. The level of students enrolled in private schools and bursary growth rate are estimated at 15% and 10% respectively. Secondary school repetition and dropout rates are targeted at less than 5% by 2015. Since these are targeted Millennium Development Goals, it is possible that some targets could have been achieved at the national level.

Assuming the average teaching load is increased to 23 hours per week, 43,077 teachers and 33,026 classrooms will be required by 2008. This translates to a financing requirement of US\$ 430 million and US\$ 531 million in 2008 and 2010, respectively. The number of teachers is estimated at 49,538 teachers with an average teaching load of 20 hours per week over the same period.

The high efficiency scenario assumes a provision for enhanced partnerships in secondary school provision with a target of 13.2% of secondary youth expected to attend private secondary schools, having increased from 8% in 2003. Unlike other scenarios, the bursary (or student-aid) allocation is targeted at a rate of 15% of Standard 8 enrollment. The additional 5% bursary allocation is for targeted not-for-profit private secondary schools. For this scenario, 39,631 teachers and 33,026 classrooms could be required by 2008. In 2010, 49,978 teachers and 41,649 classrooms are required for public schools. The estimated pupil teacher ratio by 2010 is 40:1, which is close to the government target of 35:1 (GoK, 2003b). Under this scenario, classroom requirements are estimated at US\$ 53 million by 2008 while teacher and bursary costs are estimated at US\$ 261 million and US\$ 94 million, respectively.

Following the envisaged enrollment increase and current curriculum-based teacher establishment policy, the resources required under the baseline scenario is 90,779 teachers and 54,467 classrooms by 2010. The total cost is estimated at US\$ 651 million and US\$ 793 million in 2008 and 2010, respectively. Coupled with the envisaged expansion, and the government commitment towards implementation of the Children's Act (Cap 586 of 2001), which emphasizes on making basic education compulsory and universally accessible, substantial resource will be required. In the long term, basic education is proposed at 14 years comprising of two years of pre-primary education, 8 years of primary/non-formal education, and 4 years of secondary or skills training education (GoK, 2005d). This will also require enactment of social policies to ensure high enrollment in schools. Thus, if no changes are instituted in improving resource mobilization and utilization, the sharp increase in demand for resources might be difficult to meet.

However, two main strategies are feasible. The first strategy would focus on interventions that reduce secondary education costs both at the national and the school level. The second strategy is to explore financing options that go beyond the traditional revenue sources. In the next section, the study focuses on options for reducing secondary education costs and improving effectiveness in resource utilization. The study also makes recommendations on options for financing secondary education in Kenya.

Options for Kenya Secondary Education

Despite resources for education being scarce at the national level, policy makers have options that could address the issue of financing secondary education. To alleviate the challenges associated with resource constraints for secondary education and by extension enhance enrollment at this level, two main strategies are feasible. The first is to focus on interventions that reduce secondary education costs both at national and school level. The second is to explore financing options that go beyond the traditional revenue sources.

Reducing secondary education costs

Improve resource utilization: The overall pupil-teacher ratio at all levels of education is one of the major determinants of recurrent costs, partly due to the associated teacher wage bill. The pupil-teacher ratio depends on the distribution, curriculum, and staffing norms of teachers, the number of students, and the number of schools. In 2003, the pupil-teacher ratio was 1:17 at the national level with the lowest ratio of 1:5 recorded in North Eastern Province and a high of 1:23 recorded in Western Province. However, unlike primary education where teacher establishment is based on enrollment and number of classes, secondary school staffing is based on curriculum establishments (or a regime based on teacher specialty), and most teachers specialize in at most two subjects.

One available option to reduce the secondary education cost burden on government is thus to gradually increase the Average Teaching Load (ATL) from 18 hours per week to 20 hours, 23 hours, and 25 hours. Ideally, the secondary school teaching load should be more than 18 hours per week, with teachers having an option of teaching a cluster of schools to achieve the target teaching load. Other options include increasing enrollment through the expansion of schools to at least three streams (or tracks); retraining teachers to ensure that they are able to teach high-demand subjects; and offering optional subjects in specific schools with provision for small classes being handled by part-time teachers.

Expand and construct more day schools: Comparing the proportions across school categories, teacher salaries comprise 66.0% of the day school expenditures and 37.3% in national schools, while school fees comprise 60.8% for national schools compared to 30.6% in day schools. In part, this distribution suggests that any cost effectiveness strategy in secondary education should be targeted at expanding day schools, which charge lower school fees and have lower unit costs on the part of households. The high teacher wage bill for day schools is due to the number of day schools (45.3%) compared to other categories. The boarding schools could, however, be justified in areas with sparse population distribution. Some boarding schools will have to be constructed in Arid and Semi Arid Lands (ASALs), and a larger proportion of enrollments could be encouraged by increasing the number of day students even in boarding schools, as is the case currently.

Increase class size: In 2003, secondary school class sizes ranged from 20 to 35 students per class. Thus, to reduce secondary unit costs by enhancing cost-effectiveness in education, education policy makers could target the upper limit of optimal class size, which ensures efficient use of both human and capital resources.

Improve school management systems: Although the Ministry of Education has set clear fees guidelines, implementation and enforcement systems (including the procurement at the school level) need to be closely monitored. This step could address weaknesses in management, which lead to schools charging higher levies than official levels. The Ministry of Education could also implement mechanisms for ensuring any school revenues are efficiently utilized to ensure quality education provision. Procuring school supplies at competitive prices can greatly reduce operational costs at school level.

Financing options

Increase overall allocation to secondary education sub-sector: Like many African countries with low secondary school gross enrollment ratios (GER), Kenya has experienced low and/or negative growth rates over the last two decades, with the lowest GDP growth rate of -0.3 recorded in the year 2000. In 2004, the GDP growth rate was estimated at 5.8%. Although the proportion of

public budget to all sectors (including education) increased over the same period, the real value may have declined or remained the same. Worth noting is the fact that the budgetary allocation to education has remained high over the years, estimated at about 7.2% of GDP and 27.0% of the aggregate public budget in 2004–05. The question then remains: how appropriate, efficient, and effective are the resources utilized?

The analysis of secondary school education by economic activities indicates that 93.5% of secondary public financing go to personnel costs, leaving about 6.5% for development projects, operations and maintenance. Even though overall allocation to education has increased in the recent past, the resources go disproportionately to achieving universal primary education and teacher personnel costs, compared to other sectors. Expanding secondary enrollment would require clearly defined government expenditure policies and budget priorities that encourage direct expenditure to expanding secondary education non-salary expenditures such as physical infrastructure, bursaries and targeted grants for low cost boarding schools.

The data on secondary education projections show that to achieve a 6% annual increase in primary-to-secondary transition rates (70% by 2008), secondary school financing strategies should target those completing primary education and not only those who have been able to register in secondary education. This calls for an increase in bursary allocation from the current levels. The physical infrastructure will also have to be expanded. This proposal could also be supported with more work on secondary education physical infrastructure plan. Under a high efficiency scenario, direct secondary school financing is expected to increase from Ksh. 21 billion in 2003 to Ksh. 36 billion in 2010.

Rationalize resources from other expenditure items within the sector: At the national level, secondary school unit expenditures by the government averaged 4.6 times those of primary school while university education unit expenditure is 5 times that of secondary and 20 times that of primary. Another option is that additional resources from secondary schooling can be mobilized by shifting allocation between levels. Mechanisms could be put in place for redistributing expenditure from university education in favor of secondary education, particularly after 2010 when the primary school enrollments are projected to stabilize.

Enhance bursaries and targeted funds transfers: In addition to the decentralization of secondary education bursary fund to the constituency level, and gradual increase in allocation and setting of higher minimum allocation per beneficiary, it is apparent that the current bursary provisions and cash transfers should be enhanced to sustain deserving students within the system. According to the Welfare Monitoring Survey (WMS) III of 1997, 30% of the population lived under the core poverty line while 56% of the population lived below the absolute poverty level. In 2005, about 46% of the population lived below the poverty line. The bursary allocation should be improved to target deserving students leaving standard 8 (or eighth grade). Under the current system, identification of deserving cases covers only those students already admitted within the secondary education level.

Perhaps, for sustainability purposes, with both external stakeholders and communities, the government could institutionalize the secondary education fund with initial funding of bursary allocation and encourage contributions from both NGOs and development partners towards the same. This mode of allocation is more appropriate for secondary education than education loans that are more appropriate at tertiary level. Targeting mechanisms will also need to be enhanced to ensure deserving and vulnerable groups benefit.

The government has also instituted decentralized systems aimed at channeling resources to local levels for poverty reduction and regional development. Some of the relevant programs include the Constituency Development Fund, the Poverty Eradication Fund, and the Community Development Trust Fund, especially in Arid and Semi Arid Lands (ASALs). Some of these programs

provide funding to various community-based projects, including school construction, while the bursary fund aims at increasing access to secondary education.

Strengthen public-private sector partnerships: Increasing public financing alone is not adequate given the envisaged expansion of secondary education both in the medium and long term. Other factors being constant, funding of secondary schools should expand by 115% by 2008 and by 152% by 2010 to meet the 70% transition target by 2008 and the EFA gross enrollment ratio target of 60% by 2010. In 2004, enrollment in private schools constituted 8% of the total secondary education enrollment. Thus, the private sector as well will be expected to expand the provision of education in this level. The feasible financing options could include expansion of physical infrastructure and contributions towards the proposed secondary education scholarship fund at district level, targeting the poor and vulnerable groups. In the same vein, the notion of *community school trust funds* should be explored. This involves establishing a fund sourced from all stakeholders in which prospective secondary education investors—either communities and or individuals—can access credit to establish not-for-profit secondary schools. In the 1970s and 1980s, expansion of secondary education was done through community schools that were constructed through voluntary contributions from individuals and private sector, or *harambee* spirit. This could be replicated to address the current problem.

Mobilize external assistance for secondary education through the re-profiled Sector Wide Approaches (SWAPs) in education: The logic of SWAPs is, at least in part, that governments define priorities and requests for external assistance over the medium term. Thus, as this is institutionalized in Kenya, the Government needs to prioritize secondary education as an area for external assistance, next to primary education. This would make it possible to identify forms for general recurrent and development external support, at least in the short term and with the anticipated significant transition from primary, while the government should devise sustainable mechanisms through the MTEF budget support framework.

Conclusion

Secondary education financing will continue to face major challenges if no efficient resource utilization measures are put in place. In addition to budgetary constraints, the negative impact of inequitable resource allocation and spending on inputs has been accentuated by intra-sectoral disparities in resource allocation within the secondary education sub-sector. It is also evident that non-salary expenditures at secondary education level are generally under-funded to enable provision of supplies and equipment, operations, maintenance, and repair, which are prerequisite for quality service delivery. Development expenditure does not seem to be a priority area for funding, given meagre public allocations. Persistent inequalities in the distribution of scarce education resources among various education sectors has resulted in low growth in the number of secondary schools, particularly in areas dominated by poor communities.

The inefficient targeting has negative effects on returns from both public and household financing and provision of educational services. The current financing policy is to a large extent responsible for the inequalities in school attendance among different social groups. The share of low income group benefiting from education expenditures is below 29% (though they are the majority) while that of the high income group is at 40% (though they are minority within the population). The current financing policy and mechanism cannot achieve the Millennium Development Goals and goals of the World Declaration of Education for All unless a feasible and sustainable financing mix is identified. Policy reforms for improving efficiency in spending could contribute to considerable savings. Strategies that focus on cost reduction and non-traditional revenue sources offer optimism

in expanding quality secondary education in Kenya. Finally, it is imperative to empirically establish the unit cost of secondary education in Kenya with a view to informing households, government and other stakeholders on school fees guidelines.

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