

## Social and Spill-Over Benefits as Motivating Factors to Investment in Formal Education in Africa: A Reflection around Ghanaian, Kenyan And Rwandan Contexts.

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### Abstract

This study examined the social and spill-over benefits as motivating factors to investment in formal education in selected countries in Africa. The paper had three objectives, namely) to profile the key statistics of formal schooling; ii) examine the formal education and iii) link national goals of education with expectations in Ghana, Kenya and Rwanda. The major contention of the paper is that investment in education is not a matter of random choice but rather an imperative led by the fact that education holds returns and externalities to the largest society. Authors reviewed theory of human capital, local and international publications on social and spill over benefits of education focusing on Ghana, Kenya and Rwanda. The analysis of government policies and other publications from these three African nations have shown that education is considered as a key sector in these developing nations. Nevertheless, the researchers found out that mostly only primary and secondary education are distinctively accorded considerable public financial resources which might be associated with the countries limited financial ability, competitive needs, national and global trends. However, the fact that Ghana, Kenya and Rwanda strive to become democratic, self-reliant and middle income nations by conquering long terms set visions in which caliber manpower, welfare, self-employment, reduced social inequalities, increase in average income, knowledge based society, ICT driven and sustainable economy are key characteristics; it is imperative to invest substantially in TVET and higher education. It is also recommended that Ghana, Kenya and Rwanda put in place strong institutions that objectively, effectively and rationally ensure the efficient use of all available resources towards maximum educational outputs (265 words).

**Key words:** Social Benefits, Spill-over Benefits, Private Cost, Social Cost, Private Rate of Returns, Education, Cost- Best Analysis in Education, Africa, Ghana, Kenya, Rwanda.

### Introduction

#### Background to the Study

There is an undeniable linkage between education and national economic performance (UNESCO, 2006) hence for any society to develop and prosper education is embraced as key. Education is therefore considered as a social investment since its social and spillover benefits outweigh what individuals gain as private returns (Woodhall, 2004). Therefore, these positive externalities from education (Hall, 2006) are the prime justification as to why societies and governments should continually invest more in education.

Undisputedly, apart from the social benefits, educational investments lead to substantive spill-over benefits or externalities. Spill-over benefits of education implies what the surrounding community copy, learn and gain from an educated person (King, 2007). This may be reflected in wealth, health, and feeding, living conditions among others. Such benefits overflow to other people other than single educated individuals or their families (Burton, 1963). In other words, educational returns diffuse to reach even other members of society (Gieyoung & Chong, 2013).

A deep analysis of the externalities from education can be borrowed from Moretti (2004) who emphasized that human capital externalities are ample to the extent of being a major contributor to the existing differences between poor and rich countries in long-run growth rates. In line with this, Hungerford and Wassmer (2004) certify that educational externalities were among the underlying contributing factors over the increasing rate of employment, mushrooming of businesses, and raising in personal income and housing values. These educational externalities are also valued in working environments. Niehaus (2012) commends spillovers by showing the extent to which educating a worker increases what others are able to borrow or learn from him/her. Research by Kessler and Lulfesmann (2002) shows that investment specifically in employee's training was motivated by the gaining of skills and experiences that would wholly benefit organization. In line with the foregoing, the governments' commitments to invest in education were documented in different contexts. In the United States of America, Karoly and Bigelow (2005) have demonstrated that in California and other states, there was a gradual increase in the level of policymakers' awareness of the need to offer an open access to publicly funded preschools as a result of the anticipated prospective benefits from this level of education to the largest society.

In Australia, a study carried out by Murray (2007) has clearly outlined the significance for educational public funding. This was a reaction to the ongoing current trend of viewing tertiary education as a private entity rather than a public good, which contrasted with the private investors' point of view to work closer with the community which ultimately serves them as stakeholder, manpower and clients. In Europe, a study carried out by Green et al. (2003) has concluded that there is a positive correlation between education and social cohesion. Specifically in Germany as Bauer and Vorell (2010) assert, the positive externalities have always been the striking reason that the government presents as justifications during the allocation of funds to the educational system. In Africa, the social and spill-over benefits are also known and valued. It is in this respect for instance that in Senegal, educational investments are gauged in terms of increase in productivity, spread of knowledge, organizational strength and people's openness to international scene (Seck, 2009). In Ethiopia, the social and spill-over benefits of education are exceptionally valued to the extent that since the early 1990's there are no charges levied on students who enroll for higher education (Chapman, 1999). It is against this background that this study on social and spill-over benefits as motivating factors to investment in formal education in Africa: A Reflection around Ghanaian, Kenyan And Rwandan Contexts was premised.

## Literature review

### Rationale and key concepts in relation to investment in education

According to Orazem (2012), the driving forces to investment in education are attributed to the World Bank's stand in the meeting held in Tunisia in 1962. At that time, the educational attainments were quite alarming in that 41% of the world's children aged 6-11 were not in school while in Sub-Saharan Africa, only 25% of primary aged children were in school. These were some of the shocking realizations that led the World Bank to invest \$69 billion in various developing countries in order to make education a driving force to health and economy (Orazem, 2012).

The World Bank initiative mentioned above clearly illuminates the concepts of "costs" and "benefits" of education. Hough (1993) defines cost-benefit analysis in education as a convenient approach intending to assess the expected expenses against the predicted profits. Such an approach leads to a tentative educational rate-of-return that in most cases are in favor of additional investment in education. In support of this, it was substantially confirmed that individuals who receive bachelor's degrees achieve higher socioeconomic status compared to those less educated citizens (University of Carolina, 2009).

Educational financing involves the sacrifice of alternative possible investments. For instance, instead of gaining more qualification after bachelor degree, one may decide to use his resources (time, money and physical energy) in business. This brings about the concept of opportunity cost (Sidorkin, 2007) for both individual and to the society or government. However, the rates of return on schooling, the social and spill-over benefits from education still outweigh the educational costs. Hence, the opportunity cost is not much opposing the educational investments because education holds both quantitative and qualitative benefits (Woodhall, 2004).

In fact, besides the quantifiable educational outputs measured, for instance in terms of graduation rates, education reflects qualitative benefits to individuals themselves and to the society at large. In reference to individuals, Hill, Hoffman and Rex (2005) have shown that one's education level is a determinant to the "private rate of returns" translated into social consideration, earnings, salaries, achievements and further life enjoyments. At the society level, Hall (2006) points out civic participation and creation/adoption of new technologies as two major qualitative positive externalities from education. Further societal benefits apart from better educated population include the substantial progressive decrease of unemployment rates, increase in productivity, tax revenue and hence GDP and lowering of crime rates (Becker, 1975).

Therefore, the nature of having both private and social aspects of educational benefits is to be highly appreciated and acknowledged as this heterogeneity character Marginson (2007), optimizes not only the educational returns in general but also determine their interrelationship nature whereby the social benefits eventually raise the private benefits of some other individuals eventually (McMahon, 2006).

### Educational returns and impact to the society

Investing in education is one of the best choices that people and societies may ever make. With the fact education empowers its beneficiaries with skills, knowledge and potentials; these ultimately turn into tangible personal and social capitals that accrue health and socio-economic status (Murray, 2007). It is on the basis of such evidences that investigation by Orazem (2012) led to establishing a clear link between schooling in developing countries with economic progress and autonomy. Education is a driving force to economic growth (Cattan & Crawford, 2013) and therefore policy makers ought to acknowledge its benefits. In fact, although education increase the wages, prosperous, wealth and health of its beneficiaries in terms of private returns, education has external returns that reach others in terms of externalities or spill-overs. These educational externalities also known as spill-overs constitute what is coined as public benefits of education because they benefit existing and forthcoming generations in terms of democracy, human rights, better governance, trade,

political stability, longevity (McMahon, 2010) among others. As evidence to externalities, Tengtrakul and Peha (2010)'s study has shown that the availability of computer in primary schools has boosted the availability and use of computers in households.

Furthermore, education acknowledges both monetary and non-monetary returns that together constitute the key contributors to GDP in direct and indirect ways (Owens, 2004). This consideration has incited on one hand scholars to document more about human capital externalities as a prime leading factor to productivity and economic growth and on the other hand governments to raise up investments in education as they strive to build up knowledge-based societies and competitive economies worldwide (Bauer & Vorell, 2010)

The need for gender sensitivity in education supply is a current concern. It is in this respect that a study carried by Rihani, Kays and Psaki (2006) has underlined key major benefits of girls' secondary education including increase of access to education, democratic change, and decline of infant mortality, mitigation of HIV and AIDS and finally poverty alleviation. To a more advanced level, education improves the general quality of life (Gilead, 2012) and substantiates the possibilities for innovation, entrepreneurship and job creation (University of Carolina, 2009). Such assertions are also shared by Orazem (2012) who has established the link between the years of schooling and the school quality with economic growth. McMahon (2006) confirms that the level of education was a determinant of fertility and life expectancy at the individual level while education was a correlate of democratization, human rights, political and economic stability at national or societal levels.

### **Statement of the problem**

In various scholarly texts (Cunningham, 2013; Babalola, 2003; Coleman & James, 1990), everyday communication and in political speeches, education is pointed out as a key sector for development. This reinforces Aristotle's thinking who claimed that education is the best provision for old age (University of Carolina, 2009). It also fulfills: the World Bank recognition of education as a strong baseline towards sustained economic growth (Gilead, 2012), the Education For All (EFA) goals and the Millennium Development Goals (MDGs) goals in which education remains the corner stone (UNDP, 2013). However, in some African developing countries, it is grievous to note that education is not viewed and ranked as a prime sector to be funded despite its expectations and transformative potentials. For instance, in Kenya, with the National Government Budget of Ksh 1.54 trillion in 2014/2015, education was only given 20% (Institute of Economic Affairs, 2014); In Rwanda, during the fiscal year 2013/2014, with a national capital investment of Frw 803 billion, education was ranked third (80.1 billion) (Republic of Rwanda, 2013a).

The above educational funding rates heighten the concern about educational goals' attainments. There is therefore inevitable need for African researchers to reflect upon their contexts, explicit the concepts of social and spillover benefits of education which seem to be in dire need of an academic overhaul and come up with scientific analysis that would inspire future investments in education.

### **Purpose and objectives of the study**

The purpose of this study was to examine the social and spill-over benefits as motivating factors to investment in formal education in Africa: A Reflection around Ghanaian, Kenyan and Rwandan Contexts. This study was guided by the following objectives:

1. Profile the key statistics of the formal education system in Ghana, Kenya and Rwanda.
2. Describe the formal education systems in Ghana, Kenya and Rwanda.
3. Link the national goals with expectations from formal education in Ghana, Kenya and Rwanda.

### **Theoretical framework**

This study was inspired by the theory of human capital of which development is traced back to Adam Smith. His ideas were embraced in the early 1960s by the American economist Theodore W. Schultz who actually invented the term "human capital" to reflect the prolific knowledge and skills of the workers. More theoretical advancements of this theory were made by Gary S. Becker, a former student and disciple of Schultz who argued that investment in human beings was the most valuable of all capitals (Becker, 1975). In other words, the emergence of human capital theory was a kind of revolution intending to draw attention to other resources than the physical ones such as natural resources, infrastructure, buildings and machinery focus which are at the end of the day operated on or simple creations of human power. Also true is the fact that theory intended to provide theoretical and philosophical justifications to the human potentials and skills that ultimate make their difference in earnings (Becker, 1962).

This theory was chosen to be used in this study for four major reasons. The first one is that human capital theory has extensively been used as a guide towards educational policy formulation (Gilead, 2009). The second is that education is considered as one of human capital (Walters, 2004) since human beings' expertise and potentials are

much a result of education, training and development (Walker, 2005). The third one is that human capital theory reflects a production process which requires expenditure and inputs (Erosa, Koreshkova & Restuccia, 2010). The fourth one is that this theory particularly emphasizes on education as being a formal investment whereby more education generally means higher lifetime income or higher future earnings (Sidorkin, 2007).

### **Research methodology**

This study adopted a desk survey design in which primarily documentary-descriptive approaches whereby practices, figures and facts about educational systems in Ghana, Kenya and Rwanda were gathered and analyzed one by one. However, in order to make meaningful conclusions, data in the above named countries were put under broad themes (Amin, 2005) to enable a thematic-comparative kind of analysis to take place. The discussion was guided by a proven academic knowledge of the researchers about the educational systems of concerned countries paired with thoroughly reviewed literature around the issues of educational funding, social and spill-over benefits of education under study (Orodho, 2009).

## **Findings and Discussion**

### **Levels and key statistics of formal education**

#### **Ghana**

The 2007 education reforms of Ghana categorized education into three major levels. These are the universal basic education, secondary and tertiary levels of education. The universal basic education spanned over 11 years, made up of 2 years of Kindergarten, 6 years of Primary School and 3 years of Junior High School (JHS). After JHS, students may choose to go into different streams at Senior High School (SHS), these include, General Education and Technical, Vocational and Agricultural Education and Training (TVET) or enter into an apprenticeship scheme with some support from the government (Government of Ghana, 2007). A new four year SHS system was introduced in the 2007 education reforms which offered programs in General Education with electives in General, Business, Technical, Vocational and Agriculture options for entry into a tertiary institution or the job market (Government of Ghana, 2007). The duration of four years became a subject of national debate from the year 2009 when the National Democratic Congress (NDC) took over the reins of government. The government organized a stakeholders meeting for further deliberations on the issue. The consensus was a reversal of the secondary school duration from four to three years. The tertiary education level encompasses all post-secondary education institutions that is, universities, polytechnics and colleges of teacher education. The number of years for university education remained 4 and that of the polytechnics and colleges of education, 3 years.

According to Government of Ghana (2010), the education sector anticipates increase in enrolments at the various levels of the education system. This is clearly shown in Table 1 as depicted in the sector projections in the Ghana's Education Strategic Plan (2010-2020). It depicts an increase in the enrolment for all the levels of the education sector over the 11 years period of the Education Strategic Plan. The Kindergarten section is expected to increase by 14.70%, Primary (26.49%), Junior High School (38.24%), SHS (35.33%), TVET (85.72%) and Tertiary (45.14%).

**Table 1: Ghana Education Sector Projections (Year 2010-2020)**

	2009 (Baseline)	2011	2013	2015	2020
<b>Enrolment (Public)</b>					
KG	1,159,789	1,194,262	1,229,559	1,265,688	1,359,691
Primary	3,099,234	3,280,517	3,470,971	3,671,025	4,216,140
Junior High	1,075,036	1,179,930	1,291,544	1,410,251	1,740,663
Senior High	479,296	520,752	564,776	611,506	741,159
TVET	39,068	103,422	172,912	247,848	273,644
Tertiary	141,000	157,482	175,801	196,121	257,002
CoE (# is required output of new teachers)		16,633	18,358	19,592	8,524
<b>Pupil Teachers Ratio (PTR) based on teachers on payroll</b>					
KG	34	34.3	34.7	35	35
Primary	30.6	33	36	38	45
Junior High	15	18	21	25	35
Senior High	21	24	25	26	30
<b>Percent(%) of teaching force defined as trained teachers</b>					
KG	32	53	74	95	95
Primary	58	70	83	95	95
Junior High	73	80	88	95	95
Senior High	86	89	92	95	95

**Source: Government of Ghana (Education Sector Strategic Plan, 2010)**

In terms of expenditure, the various levels of education are expected to accrue an increase in cost on yearly basis throughout the strategic plan period as shown in Table 2.

**Table 2: Total Costs (GH ₵million) and Percentages by Sub-Sector-ESP (2010-2020)**

	Recurrent and Capital Expenditure				% of Total (in 2015)
	2011	2013	2015	2020	
<b>Basic Education</b>	1,550	1,794	2,072	2,017	62.4
Kindergarten	207	253	300	406	9.0
Primary	819	943	1,069	1,031	32.2
Junior High	524	599	702	580	21.1
<b>Second Cycle Education</b>	444	536	629	777	18.9
Senior High	358	392	415	503	12.5
TVET	80	138	205	264	6.2
Apprenticeship	6	7	8	10	0.3
<b>Colleges of Education</b>	51	46	38	34	1.2
Study Leave	42	27	12	13	0.4
<b>Non-Formal Education</b>	6	10	13	23	0.4
<b>Special Education</b>	19	27	37	67	1.1
<b>Tertiary Education</b>	391	382	363	434	10.9
<b>Management</b>	157	158	158	156	4.8
<b>Total</b>	<b>2,658</b>	<b>2,981</b>	<b>3,322</b>	<b>3,524</b>	<b>100</b>

**Source: Government of Ghana (Education Sector Strategic Plan, 2010)**

It is clear from Table 2 that though various sectors of Ghana's education system will experience increase in expenditure over the period under consideration, the greatest beneficiary is the Basic Education sector. This is due to the fact that the government of Ghana places much emphasis on the quality of education in the early years of schooling. Thus, the primary schooling sector remains a spending priority for the Ministry of Education (Government of Ghana, 2010). In view of this, the Education Strategic Plan (2010) projects an increase in the expenditure pattern on the various levels of education by 62.4% for Basic Education, 18.9% for Secondary Education and 10.9% for Tertiary by the year 2015.

## Kenya

The national education system has evolved over time. From independence to date formal education has changed from the initial 7-4-2-3 cycle to the present 8-4-4 system which is geared towards making education more relevant to the labour market and thus produce skilled and high-level manpower to meet the demands of the economy. The initial 7-4-2-3 system was primarily meant to produce highly intellectual human resource to replace the white experts who left the country after she attained her freedom from the colonialists (Muricho & Chang'ch, 2013; MoE, 2012).

In line with the new Kenyan constitution inaugurated in 2010 and the Kenya Vision 2030, great emphasis is placed on the link between education and the labour market, the need to create entrepreneurial skills and competences, and the need to strengthen public and private sector partnerships. This has considerable importance for the structure and focus of the education system and curriculum. It also has considerable relevance to teacher development at all levels starting from early childhood to university and trainers for high technology and technical skills. Consequently the government gives serious consideration to changes to the 8-4-4 structure, the introduction of technical and academic curriculum pathways, and the centrality of ICT to teaching and learning. Kenya Vision 2030 also recognizes the need for a literate citizenry and has set targets for eliminating adult illiteracy whilst increasing learning achievements (Republic of Kenya, 2012). Budgetary allocations to the education sector have also changed over time. The table 3 below shows various budgetary allocations to key sectors of the economy in the 2013/2014 national budget.

**Table 3: Budgetary allocations to different sectors in the 2013/2014 budget**

Sector	Allocations (Ksh)	Allocations (Ksh)
	2013/2014 FY	2014/2015 FY
<b>Education: free primary and secondary education, school feeding program</b>	<b>Kshs. 273.7bn</b>	<b>Ksh 294.55 bn</b>
<b>Health services</b>	Kshs. 34.7bn	Ksh 28.7 bn
<b>Social protection, culture and recreation</b>	Kshs. 57.2bn	
<b>Energy, ICT and infrastructure, geothermal development</b>	Kshs. 220.8bn	Ksh 183.3 bn
<b>Agriculture and rural development</b>	Kshs. 38.1bn	Ksh 53.3 bn
<b>Environment, water and irrigation and housing</b>	Kshs. 55.4bn	
<b>Judicial reforms</b>	Kshs. 16.1bn	
<b>Parliamentary reforms</b>	Kshs. 19.0bn	
<b>National Security</b>	Kshs. 74.4bn	Ksh 220.9 bn
<b>Public administration and international relations</b>	Kshs 134.1	
<b>Governance, justice, law and order</b>	Kshs. 105.1bn	
<b>Contingency Fund to cater for unforeseen expenditures</b>	Kshs. 5.0bn	
<b>Regional integration</b>	Kshs. 22.7bn	

Sources: Adili newsletter issue 142; [www.pwc.com/ke](http://www.pwc.com/ke); [www.ieakenya](http://www.ieakenya); [www.kpmg.com](http://www.kpmg.com)

Table 3 above shows budgetary allocations in two consecutive financial years, 2013/2014 and 2014/2015. The inclusion of only a few sectors in the second financial year portrays the critical roles these sectors play in the

development of the national economy. Having suffered several security breaches in 2013, it easily explains the massive increase in budgetary allocation to national security.

The marked increase in educations allocation by 7.6% from Ksh 273.5 to 294.55 billion may be good indicator of the importance of education in human resource development and economic growth. The allocation again constitutes 27.3 % of the total national budget of Ksh. 1.77 trillion, up from 20% the previous year with a budget of Ksh 1.64 trillion. It is worth noting that the Education Sector comprises of the State Department of Education, the State Department of Science and Technology, the Teachers Service Commission (TSC) and their affiliated institutions. The largest expenditure growth rate of 10.7% was posted by the Teachers Service Commission (TSC). Equally TSC takes the bulk of the sector’s budget, 53.7% followed by the State Department of Education and the State Department of Science and Technology at 24.8% and 21.5% respectively. The State Department for Education whose mission is to promote and co-ordinate quality education, training and research for empowerment of individuals is categorized into four sections namely: Primary Education, Secondary Education, Quality Assurance and Standards and General Administration and Support Services. About 87% of the Department’s budget of Ksh 76.5 billion is targeted towards enhancing access to primary education through increased enrolment rates as well as increase transition rate to secondary education. It is worth noting that there is a new sub-programme called ICT capacity Development, with a proposed allocation of Ksh 17.6 billion under the Primary Education Programme, with a higher allocation than FPE. This sub-programme is intended to train teachers in ICT, development of digital content and rolling out computer laboratories for class 4 to class 8 in all schools throughout the country. University education at 84.4% is the largest component of the Department for Science and Technology budget of Ksh 66.5 billion and the balance is intended for the other tertiary institutions including Technical, Vocation Education and Training, Youth Training and Development and Research management and innovation ([www.ickenya](http://www.ickenya) ;[www.pwc.com/ke](http://www.pwc.com/ke) ).

Table 4 below shows the students’ enrolments in different levels of education. It shows a continuous increase in enrolments across the years from 2008 to 2013. This may explain the increase in allocations to education explained above even as the government pursues the goals of Education For All (EFA) and Universal Primary Education (UPE) among others

**Table 4: Student enrollment, 2008 – 2013 (in thousands)**

Years	2008	2009	2010	2011	2012	2013
<b>Primary school</b>	8563.8	8831.4	9381.2	9863.9	9995.2	10182.5
<b>Secondary school</b>	1375.9	1472.6	1653.3	1767.7	1914.8	1104.3
<b>Universities<sup>1</sup></b>	122.8	177.7	177.6	198.3	240.5	324.6
<b>Other institutions<sup>2</sup></b>	109.6	107.3	111.1	133.8	158.5	185.1

Source: Kenya National Bureau of Statistics (2012&2014)

Table 5 shows percentage of budgetary allocations to education over the same years, 2008 to 2013. Except for the year 2013, increases in enrolments in table 2 appear to coincide with increase in percentage of budgetary allocations along the years.

**Table 5: Ministry of Education budget as a percentage of total government’s budget**

Years	2008	2009	2010	2011	2012	2013
<b>Percentage of total government budget</b>	16.5	16.0	18.7	20.4	21.0	19.0

Source: Kenya National Bureau of statistics (2012 & 2014)

<sup>1</sup> Public and accredited private universities

<sup>2</sup> Teacher Training Colleges, Polytechnics, Technical Schools & Institutions of Science & Technology

Below is a breakdown of the allocations of the 294 billion allocated to education to different sub-sections of education in the 2014/2015 budget. A total of of Ksh. 139 billion is split as follows:

- Ksh. 28.2 bn for free day secondary education,
- Ksh 13.5 bn for free primary education.
- Ksh 17.4 bn for Laptop project to schools, development of digital content, building capacity of teachers and rolling out computer laboratories.
- Ksh 6.4 bn for technical training institutes
- Ksh 5.7 bn for higher education loans and
- KSh 55.0 bn for university education.
- KSh 0.4 for sanitary towels for girls in school

### Rwanda

In Rwanda, the formal education is organized in four major categories (Republic of Rwanda, 2008a). These include: pre-primary education which enrolls 3 years' kids and last three years, twelve years basic education (12YBE) encompassing primary ( 6 years) and secondary education (lower level 3 years and upper level 3years), technical and vocational education and training- TVET (1 to 3 years) and lastly higher education (2 to minimum 4 years). With such a structure, most 12YBE leavers on completion tend to be 18 years old on average (Paxton, 2012). In terms of costing of formal education, the tables 6 and 7 below portray statistics about teacher, classroom projections and costing from the year 2006 to 2015.

**Table 6: Teacher Projections**

Teacher projections	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Primary</b>										
Teacher stock required	32,785	34,668	36,467	38,242	39,949	40,978	41,764	42,524	43,381	42,590
Projected new teacher demand	2,866	2,839	2,869	2,854	2,228	2,015	2,013	2,133	510	942
Cost of teacher salaries (Mils)	18,253	20,634	23,155	25,859	27,601	18,933	30,143	31,383	32,750	32,906
<b>Tronc Commun/lower secondary</b>										
Teacher stock required (Pub+Priv)	5,637	6,186	6,899	7,883	9,063	10,383	11,698	12,911	13,932	14,717
Projected new teacher demand	831	1,022	1,329	1,574	1,773	1,834	1,798	1,666	1,482	1,466
Cost of teacher salary (Public)	1,891	2,315	2,898	3,733	4,813	5,836	6,894	7,912	8,813	9,556
<b>Upper Secondary</b>										
Teacher stock required (Pub+Priv)	3,278	3,343	3,415	3,487	3,615	3,760	3,920	4,099	4,299	4,516
Projected new teacher demand	224	234	243	302	326	348	375	405	432	464
Cost of teacher salaries (Mils)	1,010	1,171	1,361	1,539	1,843	2,034	2,243	2,458	2,698	2,951
<b>Total teacher salary costs</b>	<b>21,154</b>	<b>24,120</b>	<b>27,414</b>	<b>31,130</b>	<b>34,256</b>	<b>36,503</b>	<b>39,279</b>	<b>41,753</b>	<b>44,255</b>	<b>45,412</b>

The analysis of the tables 6 and 7 shows that right from the year 2006 to 2015 there has been a progressive increase in primary and secondary education funding. These funds were dedicated to teachers' salaries and



general school operations expressed as capitation grants. However, the figures in table 8 below show discrepancies in funding between different levels of formal education in Rwanda.

Source: Republic of Rwanda (2008c)

**Table 7: Capitation grant costings**

<b>Capitation Grant Projections</b>										
<b>Primary School students</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Projected total enrolment	1,941,738	2,000,921	2,051,151	2,096,183	2,076,706	2,020,084	1,952,781	1,885,719	1,824,442	1,791,163
Capitation Grant	2,500	3,226	4,122	5,232	5,525	7,031	7,578	8,170	8,812	9,019
<b>Total costs of Capitation Grant (Millions)</b>	<b>4,854</b>	<b>6,454</b>	<b>8,458</b>	<b>10,988</b>	<b>13,549</b>	<b>14,204</b>	<b>14,797</b>	<b>15,406</b>	<b>18,077</b>	<b>18,154</b>
<b>Tronc Common/lower secondary students</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Projected Total Students	170,029	187,142	209,385	240,103	278,107	321,120	364,896	405,759	441,288	471,785
% Private	38%	36%	31%	28%	25%	23%	21%	21%	21%	20%
% Public	62%	64%	69%	72%	75%	77%	79%	79%	79%	80%
Number of Private Students	64,581	57,758	70,672	73,722	76,838	90,068	83,488	87,162	91,082	95,209
Number of Public Students	105,447	119,384	138,713	166,381	201,269	241,052	181,209	318,607	350,206	376,576
% Public Boarding	41%	35%	30%	25%	21%	17%	14%	12%	10%	8%
Number of Public Boarding	43,541	41,703	40,992	41,695	41,892	41,771	40,570	38,269	35,001	31,352
Number of Public Non-boarding	61,905	77,681	97,721	124,786	159,378	199,281	240,639	280,338	315,185	345,224
% Private Boarding	41%	35%	30%	25%	21%	17%	14%	12%	10%	8%
Number of Private Boarding	26,667	23,669	20,885	18,431	15,993	13,875	12,045	10,468	9,108	7,927
Number of Private Non-boarding	37,915	44,089	49,788	56,292	60,845	65,193	71,443	76,684	81,974	87,282
Boarding Capitation Grant	21,000	21,391	21,676	21,823	21,530	22,729	23,899	25,044	26,165	27,262
Non-boarding Capitation Grant	11,000	11,205	11,354	11,431	11,277	11,905	12,518	13,118	13,705	1,429
Average Capitation Grant	15,129	14,763	14,404	14,029	13,411	13,781	14,150	14,550	14,951	15,361
Cost of Public only (Mils)	1,595	1,762	1,998	2,334	2,699	3,322	3,982	4,636	5,236	5,784
Cost for Private only (Mils)	977	1,000	1,018	1,034	1,031	1,103	1,182	1,268	1,362	1,462
<b>Cost for Public and Private</b>	<b>2,572</b>	<b>2,763</b>	<b>3,016</b>	<b>3,368</b>	<b>3,730</b>	<b>4,425</b>	<b>5,164</b>	<b>5,904</b>	<b>6,598</b>	<b>7,247</b>

Source: Republic of Rwanda (2008c)

In fact, a scrutinized view of the table 8 above shows that lower and upper secondary education which fit in the new 12YBE national prior targets have been substantially funded respectively up to 367.9% and 372.2 % in just

a period of nine years while technical and vocational education-TVET (179.6497%) and higher education (145.5889%) are the levels to which little funding were projected as depicted in Table 8.

**Table 8: Actual and projected expenditure 2009/10-2014/15 (RWF millions)**

Actual and projected recurrent expenditure	2009/201 (Actual)	2010/2011 (Projected)	2011/2012 (Projected)	2012/2013 (Projected)	2013/2014 (Projected)	2014/2015 (Projected)	Total (2009/10-2014/15)
Pre-primary	299	215	511	646	826	1,050	3,548
Primary	55,809	64,438	85,166	100,119	122,848	150,035	578,415
Lower Secondary	24,478	41,658	62,434	72,054	81,443	90,058	372,125
Upper Secondary	9,718	10,150	12,146	17,776	26,108	36,173	112,071
Pre-service teacher training	1,480	2,641	3,040	3,474	3,963	4,870	19,468
TVET (Technical and Vocational Education and Training)	7,366	7,731	9,022	10,293	11,696	13,233	59,340
Higher Education	33,438	32,493	35,668	39,419	43,724	48,682	233,425
Non-formal	435	458	495	536	580	627	3,130
STR (Science, Technology and Research)	1,648	3,513	3,618	3,727	3,838	3,954	20,297
Institutional Support	1,411	1,507	1,710	2,000	2,379	2,812	11,820
<b>TOTAL</b>	<b>136,083</b>	<b>164,804</b>	<b>213,811</b>	<b>250,044</b>	<b>297,405</b>	<b>351,493</b>	<b>1,413,640</b>

Source: Republic of Rwanda (2010).

Pre-primary education is moderately funded even though is still a level of education that requires a country wide formal set up and immense support. This concurs with the reported current situation on Early Childhood Education (ECE) service provision that clearly pointed out that these schools are still very few especially in rural areas thus inaccessibility; while in towns most of these are run by private investors or parents' unions (Republic of Rwanda, 2011).

### National goals and expectations from formal education

#### Ghana

Ghana as a nation has undertaken major educational reforms since independence. These reforms basically aimed at improving the education system in light of the changing national goals and to align with emerging global trends. In line with this desire to reach middle- income country status by the year 2020, the Government of Ghana launched its strategic development road map (Ghana Vision 2020) in 1996. The basic objectives of this strategic plan were to reduce poverty, increase employment opportunities and average incomes, and reduce inequalities in order to improve the general welfare and material wellbeing of all Ghanaians. The Vision 2020 document contains an education policy with the objective to ensure that all citizens are functionally literate and productive irrespective of the gender and social status.

This vision was further enhanced by the National Education Reform (NERIC, 2007) resulting in 2008 Education Act (Act, 778). This Act states that the educational system intends to produce well balanced individuals with requisite knowledge, skills, values, aptitudes and attitude. This will ultimately lead to functional and productive citizens for the development and the democratic advancement of the nation and for related matters. This Act clearly underscores the fact that the education sector is seen as the major sector around which national development revolves. It also states clearly that Education at the basic level is free and compulsory and further holds parents who do not send their children of school going age to the basic school liable. All these provisions of the Education Act, 2008 (Act 778) aimed to ensure that the nation's citizenry are well equipped with the necessary skills ,knowledge, attitudes and abilities right from infancy to serve as the desired manpower for national development. This is in tandem with the provisions of the Ghana Education Strategic Plan (2010-2020) mission statement which states that, "to provide relevant education with emphasis on science, information, communication and technology to equip individuals for self-actualization, peaceful coexistence as well as skills for the workplace for national development". Again, the thrust of the Technical and Vocational Education and Training (TVET) policy as stated in the Ghana Education Strategic Plan (2010-2020) is to improve the trainability of the workforce, improve training quality and relevance, promote productivity in agriculture through TVET, build a human resource base for increased manufacturing and industrialization and develop a world-class workforce for the various sectors of the Ghanaian economy. The Ghana Education Strategic Plan (2010-2020) also indicates that, the National Council for Tertiary Education (NCTE) was established to promote quality,

relevance and excellence in tertiary education, to facilitate the development of world-class human resources and to support national development. The attainment of national goals and aspirations can therefore be said to be closely tied to the formal education sector.

### **Kenya**

The government acknowledges awareness in that the provision of education and training to all Kenyans is fundamental to the success of its overall development strategy (Republic of Kenya, 2005). It therefore aims at ensuring equitable access to quality education and training for all her children, including disadvantaged and vulnerable groups. The long-term objective of the Government is to provide every Kenyan with compulsory basic quality education and training, including 2 years of pre-primary, 8 years of primary and 4 years of secondary or technical education. The aim of providing this system of education is three-fold. It is meant to enhance the ability of Kenyans to preserve and utilize the environment for productive gain and sustainable livelihoods. The second important goal of education is the development of quality human resource which is central to the attainment of national goals for industrial development. Finally education is necessary for the development and protection of democratic institutions and human rights. These goals reflect the aspirations of the people of Kenya as stated in the constitution of Kenya (2010), and reiterated in Vision 2030 (MOE, 2012). These main goals provide the impetus upon which policy formulation in education in Kenya derives.

Policy development on education is indicative of the evolution of education and its function among the citizenry. Prior to independence, education was modeled according to race including white, Asian and African. Africans received education that would be used for manual activities. They were presumed to be intellectually inferior to the whites and Asians. After independence in 1963, the first policy was drafted in 1965 which abolished racial segregation in education. Its main thrust was the development of human capital and fostering national unity in the country. Funding was thus done primarily by the government. In 1976, another policy statement sought to include communities in putting up infrastructure in their schools. Cost sharing became policy after 1988 as government tried to improve education funding and the quality and relevance of education. In 2000, a more comprehensive policy was drawn which added accelerated industrial and technological development to the goals of education. It also included totally integrated quality education and training (TIQET) which was in line with international Education for All (EFA) and the Universal Primary Education (UPE) goals of education. Vision 2030 and the Constitution of Kenya 2010, both emphasize the role of education in national development (Republic of Kenya, 2005 & 2012).

In all the undertakings, the common denominator of the adopted policies was to enable education to contribute effectively in national development and unity among all Kenyans. In view of these important roles that education is meant to play, it would be logical to assume that financing of education in comparison to other sectors of the economy from the national budgetary allocation reflects this. The forthcoming sections of this paper on Kenya shall attempt to dissect the actual situation thereby exposing the reality that connects the goals and the investments towards education.

### **Rwanda**

Right from the country's Vision 2020 (Republic of Rwanda, 2000), Rwanda aims at ensuring that its citizens are not only capable of reading and writing but also empowered with varied professional and technical skills. Hence, the mission driving the Rwandan education sector is to transform and ensure that this target is reached by substantially addressing the issues of ignorance and illiteracy and supply the required skilled human resources (Republic of Rwanda, 2013b) that will aim at the attainment of a long lasting socio-economic development (Republic of Rwanda, 2011). Therefore, right from early childhood education, the educational provisions and learning outcomes have to ensure that the holistic approach that offers mental, physical, social and emotional development is at the heart of training to produce useful and successful citizen (Republic of Rwanda, 2011).

With reference to the above, between 2013 to 2018, the Rwandan education system is expected to fill the gap of 1,260 bachelors degree holders (35%), 1,809 Masters Degree holders (51%) and 484 PhD holders (14%). On the other hand, a big number of technical and hands on skills are very much need. The projections reach 14,633 graduates from international professional certificates (16%), 102 specialists from short training (0.0001%), 3,0224 artisans (33%) and 47,108 are TVET-technicians (51%) (Republic of Rwanda, 2013b). In the case of higher education, the expectations are very high. In fact, this level of education, is expected to avail skilled, well trained, imaginative, competitive and creative manpower that support the national target to become a transformative nation, united, vibrant and of strong economy (Republic of Rwanda, 2008b).

### Conclusion and Recommendations

The overall findings of this study led to the realization that the governments of Ghana, Kenya and Rwanda are very much committed to build their educational systems as one of the key areas for their long term and sustainable socio-economic development. This is clearly observed right from the educational policies and goals in place. In fact, these countries have been attempted to reshape their educational systems so that it can produce human resources equipped with adequate skills, knowledge and abilities; based on which poverty alleviation, welfare, employment and socio-economic progress can be assured. However, early childhood and TVET need more sounding voice and enforcement as formal levels of education.

As far as educational funding is concerned, there are differences between the three country attributed to the national priorities, economy, population and country side. Indeed, there are slight differences in duration and aims of different levels of education. Despite these, the similarity is that primary education is the level of education that gets heavier enrollments and more government support. This is justified by the increase in budget allocation year after year; which might be associated to the national and international tendency to make that level of education basic, free and compulsory.

The analysis shows that specifically in Ghana, the government remains with beyond 90% of the educational sector expenses (Republic of Ghana, 2013 & Government of Ghana, 2010). This is an inspiring model however; the sustainability of the governments' continued investment may not be assured since the rate of funds to higher education is decreasing. Therefore there is need for alternative institutes to finance some of their expenditures.

The long lasting funding models as per these countries are in three fold. The first is to use alumni, parents and philanthropists as in the case in Ghana whereby these educational partners now cover 70% of the Academic Facility User Fees; which is a demonstration of the responsibility of social investment. The second is the Kenyan approach to attract potential international agencies to enable the country to set up strong baselines resources on the basis of which gradually the country move on its own. The third one the fixed cost sharing between families and the government as practiced in Rwanda.

The observed decreasing government funding to higher education and the increasing limited chances of access to this level of education especially to poor students should be looked into so as not to carry the wrong message that this level of education has been turned into a private good (Murray, 2009). In relation to this, this study suggests that Ghana, Kenya and Rwanda governments maintain strong partnership with private sectors, largest community, local and international potential stakeholders to maximize higher educational opportunities (Rihani, Kays & Psaki, 2006).

Nevertheless, despite the educational achievement, these three African nations still acknowledge the issues of insufficient funding, inadequate and unequal distribution of resources to the disadvantage of rural areas, teacher shortage and qualification, bureaucracy, increasing number of graduates which higher levels of education hardly accommodate, poor ICT penetration especially in primary schools and lack of curricula orientation to the labor market, which all together may lead to the deterioration of dreamt visions in the education sector (Orazem, 2012).

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