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**Session 3**  
**Presentations  
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Thematic synthesis report on sub-theme 3

**Preparing Knowledge Workers for Africa's Development: Articulating Upper Secondary with Higher Education**

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**Working Document**

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## List of Acronyms and Abbreviations

AAU	Association of African Universities
BTVET	Business, Technical, Vocational Education and Training
CAPA	Commonwealth Association of Polytechnics in Africa
CHE	Council for Higher Education
EFA	Education for All
EMIS	Education Management Information System
ERNWACA	Educational Research Network for West and Central Africa
GER	Gross Enrolment Ratio
HEIs	Higher Education Institutions
ICT	Information and Communication Technology
IUCEA	Inter-Universities Council for East Africa
LMD	Licence Masters Doctorat
MDGs	Millennium Development Goals
NAMCOL	Namibia College of Open Learning
NGOs	Non-Governmental Organizations
PUIB	Public Universities Inspection Board
SMT	Science, Mathematics and Technology
SSA	Sub-Saharan Africa

# 1. Executive Summary

## 1.1 Higher education in national development

Higher education is perceived as a vehicle for various groups in the society to access political, economic and social capital, power and status for participation in the democratic space and overall national development. It is also seen as an instrument for equitable distribution of wealth, resources and opportunities in the society. In this sense higher education is a highly sensitive political issue and indeed has become a highly demanded and valued commodity. African countries recognize the potential of higher education as a key driver for economic growth, overall improvement in living standards and the creation of livelihoods, cultural renaissance and global competitiveness.

Tertiary education in general in Africa faces a number of critical challenges. In comparison with developed countries and the fast-developing Asian countries, African countries lag behind in terms of the proportion of the relevant age cohort that is able to access higher education. While in Africa this ratio is about 5 percent, the advanced developing countries are targeting about 50 percent of the age cohort. Secondly, the inequalities of the past associated with gender, regional, racial and social class have persisted. Thirdly, the challenge of a balanced discipline mix, curriculum relevance and quality of skills and competencies taught in higher education institutions have remained. This has led to graduate unemployment, while at the same time serious shortages of advanced skills and specializations in various sectors and levels persist. Nevertheless, there is a widespread recognition that education and in particular university education is critical to the creation, development and transfer of knowledge, skills and competencies that drive modern economies and global competitiveness.

Globalization and development of the knowledge society has introduced new imperatives into the education and training of Africa's human resources. In particular, the rapid changes in the nature of knowledge, requiring curriculum reforms and innovations need attention. The role of ICT and new technologies in opening up new opportunities for learning, teaching and research as well as dissemination of knowledge and skills is another driver of the changes and innovations in higher education. Globalization of higher education is also marked by intense marketing of degree and research programs intended to attract students, academic talent and resources. Regionalization of higher education or the mobility of students within the various geographical regions of Africa is increasing.

Promoting equity of access to higher education and equity of outcomes, whether nationally or regionally, is an essential condition for meeting national needs for knowledge workers and competent leadership. This in turn is premised on the effective articulation of upper secondary school with higher education. Secondary education institutions prepare most of the students who end up in the tertiary sector. Hence the preparedness of secondary school leavers in terms of quality of their academic performance, their language, mathematics and science skills, subject combinations, as well as their values and attitudes are critical to the ability and effectiveness of higher education to successfully produce the knowledge workers and quality leadership that Africa needs.

## 1.2 Findings from country case studies

The case studies reviewed for this synthesis paper have looked into the issues of policy and governance, access and equity (gender, regional and to some extent social class), quality and relevance of preparation of students and the role of assessment instruments in the transition from upper secondary to tertiary education. In particular, the role of examinations in mediating pathways and allocation of places in higher education institutions is given attention. The countries surveyed cut across lusophone (Mozambique), francophone (Cote d'Ivoire, Mauritania, Senegal), and Anglophone (Ghana, Kenya, Mauritius, Namibia, Uganda) coun-

tries.

### **1.2.1 Policy and Governance**

Articulation between upper secondary and tertiary education is greatly influenced by both national and institutional educational policies and norms. In particular, policies that govern the following factors have been identified as playing an important role in mediating the transition process: the preparation of upper secondary school students; the enrolment capacity of higher education institutions; differentiation between university and non-university higher education institutions; and the national accreditation and quality assurance mechanisms. In most countries in Africa there is a tendency to concentrate on the needs of those students who will proceed to academic and professional programs and ignore the fact that the majority of upper secondary leavers do not end up at the university. The Namibia College of Open Learning (NAMCOL) is however unique in this respect. NAMCOL offers opportunities for learners from informal or non-formal backgrounds to re-enter the formal system through an alternative mode of participation in secondary education. The slow expansion of the higher education systems in many African countries has limited their capacity to increase enrolments in tandem with demand, thus limiting the chances of upper secondary school graduates to acquire higher education. The problem is compounded by inadequate differentiation and diversity of the institutions and programs at the higher education level, leading to a reduced opportunity for selection and choice by prospective students.

### **1.2.2 Financing**

Apart from the enrolment constraints at the higher education level, the other key factor affecting the rates of transition from upper secondary to higher education is availability of resources to finance the costs of higher education. The role and dominance of the state in funding of higher education is gradually coming to an end with entry of private investors and the expectation that students should contribute to the cost of their education. There are also strong indications that households will be required to contribute more toward their children's university education. And there is evidence that some universities are taking up the challenge of generating substantial amounts of money to meet their operating expenses. It is reported that the University of Technology in Mauritius, a public university, generates as much as 70 percent of its recurrent expenditure requirements. The Kwame Nkrumah University of Science and Technology in Ghana was able to generate as much as US\$ 4million in one academic year from fee-paying students alone.

### **1.2.3 Access and Equity**

Access to higher education is often analyzed in the context of university education. There is need, however, to discuss access to higher education concurrently with opportunities for access to non-university institutions such as polytechnics, professional and skills training institutions both public and private. The case studies and background papers have brought out the nature and extent of how inequalities that exist at secondary school level tend to be reproduced and amplified as students transit from upper secondary to higher education. The gender, regional and socio-economic inequities tend to be entrenched the higher one moves up the education ladder, and in particular in the professional and highly marketable degree programs.

A number of interventions have been undertaken in some African countries to deal with gender inequalities in higher education. These interventions include affirmative action in favor of female candidates, and female-only scholarships and bursaries. In Ghana, for example, a number of universities have admission policies that lessen the competition burden that female applicants face. The University for Development Studies has an even more radical gender policy under which all female applicants satisfying the basic entry requirements are admitted into any program of their choice, including the sciences.

There is no data to test the effectiveness of loan schemes, bursaries and scholarships in promoting equity and access of the poor and the disadvantaged to higher education. But we know that very often scholarships and bursaries, including those offered by corporate bodies and donor agencies; target the brightest rather than the poorest students. There is very little empirical data on how regional and socioeconomic background of stu-

dents affect access and equity in higher education and how loan schemes, bursaries and scholarships and other interventions promote equity and access of the poor to higher education.

Some higher education institutions Kenya, Uganda, and Ghana offer customized bridging courses for upper secondary school graduates and others who do not fully satisfy direct or regular admission requirements. It should however be recognized that these interventions are actually trying to remedy the unsatisfactory outcomes of upper secondary education. Bridging this “articulation gap” requires interventions that promote quality delivery at the secondary school level.

#### **1.2.4 Education and Training of Education Personnel**

Teachers at upper secondary school have an important role to play in bridging the articulation gap with higher education. Availability and distribution of teachers particularly in critical areas of learning such as science, mathematics, languages and technology relates directly to the quality and adequacy of preparation of students for higher education and training. It must be noted that learning deficits at the upper secondary level constitute a serious barrier for school leavers to meet the intellectual demands of higher education.

#### **1.2.5 Curriculum Development and Articulation**

There is a real concern in a number of countries about the absence of critical analysis and dialogue as to how curriculum changes and innovations implemented at the upper secondary level articulate with university curriculum and programs. While university professionals are involved in curriculum reforms at secondary school level, there are no reciprocal arrangements when it comes to discussions related to reforms university curriculum and programs. This may lead to incoherence between the two levels. Countries in francophone Africa are currently embarking on far-reaching university reforms that seek to divide university education into three distinct levels: Licence – Masters – Doctorat (LMD). The LMD reforms bring into sharp focus the need to review and align the secondary school curriculum with the proposed changes at the university in order to ensure better articulation between the two levels.

#### **1.2.6 Articulation and Assessment**

Examinations play a critical role in mediating the process of transition between the various levels of the education system. Performance in the national examination is the accepted system of allocation and admission to higher education institutions. In countries like Kenya, Mauritius, Tanzania and Uganda admission into higher education institutions is centralized under the auspices of a joint admissions board. Centralized admission systems allow for equitable and transparent allocation of the available opportunities in public universities in these countries. In Mozambique, on the other hand, each individual institution sets up its own admissions standards which may vary from year to year. However private universities in most of these countries have their own selection mechanisms, which while taking cognizance of performance in the national examinations, allow the institutions to modify their admissions criteria to include candidates with non-formal qualifications and those who have taken remedial courses. This in effect allows private universities to set their own criteria which go beyond academic performance in the national examinations.

### **1.3 Lessons Learnt and Way Forward**

In a number of countries, it was observed that examinations play a crucial role in determining the way teaching and learning is done in secondary schools, and how the curriculum content on the whole is emphasized and implemented. The quality of secondary education is also influenced by the perception of teachers, students and parents on how the limited places in higher education are allocated. Secondary education has therefore become a preparatory theater for the intense competition experienced in the transition and access to higher education. The main concern is whether the students are adequately prepared not only for access but also to succeed in higher education as well as for life-long learning. Higher education needs to contribute more effectively to improving the quality of basic and secondary education.

The findings of the case studies do indicate that demand for tertiary education will continue to escalate, calling for additional funding and investment in the sector. Households will be called upon to shoulder an increased responsibility for financing higher education. The role of the state will become much more of regulating and building effective governance structures and formulating policies. The emerging partnership of state and private providers on the continent will certainly have to be strengthened and expanded. Regional cooperation in higher education is expected and mechanisms for this to happen will be needed. This will call for increased quality assurance at the institutional, national and regional levels.

Gender inequalities experienced at upper secondary tend to be reproduced at higher education levels especially at the university. Hence interventions at higher education levels while useful, need to be well thought out and carried out in conjunction with reforms, affirmative actions and interventions at lower levels of the education system.

Emphasis should be put on expansion and modernization of non-university institutions to create more opportunities for training of middle level and sub-professional cadres of skilled human resources to meet rising demand as African economies are revitalized, and to achieve a balanced growth in the development of knowledge, competencies and skills. Proper credit accumulation and transfer systems need to be developed by the regulatory agencies and professional bodies as a way of integrating and popularizing the non-university institutions.

Given the importance of the transition between upper secondary and higher education, there is need for all stakeholders to engage in evaluative dialogue and formulation of policies that address the many and complex issues involved in successfully negotiating the interface between the two sectors.

## **2. Introduction: The Context of Development of Upper Secondary and Higher Education**

### **2.1 Globalization and Development of Knowledge Society**

The development of secondary education and its interface with higher education in Africa need to be analyzed and understood in the context of global developments in economics, knowledge, science and technology. The dynamics of globalization such as information and communication technologies, research and innovation are the key drivers in the production and development of knowledge, skills, research and adaptation of new ideas in business, management and production, and marketing of goods and services. Hence there is a widespread recognition that education and in particular university education is critical to the creation, building and transfer of knowledge, skills and competencies that drive modern economies and global competitiveness. African countries, youth and educators are learning from what is going on in China, India, South Korea, Malaysia, Europe and others as well as what the United States education system has exemplified for decades. The implications and impact of these forces on the development and articulation between upper secondary with higher education and training in Africa therefore need to be explored. In particular, the rapid changes in the nature of knowledge, requiring curriculum reforms and innovations need attention. The role of ICT and new technologies in opening up new opportunities for learning, teaching and research as well as dissemination of knowledge and skills is another driver of the changes and innovations in higher education.

These dynamics have implications for what is learnt at upper secondary school level and how it is linked to higher education curriculum requirements. African education systems are in the midst of escalating demands for access and equity and crippling financial constraints. At the same time, they are under enormous pressure to produce human resources to meet the requirements of the rapid changes in the market for knowledge, skills and competences. Furthermore, as more profound changes are anticipated as a result of globalization and the development and deepening of information and communication technologies in Africa, there is the

persistent question as to what kind of institutional arrangements are required for the creation and transfer of knowledge and skills needed for continued learning in the context of rapid obsolescence of knowledge and skills, and ensure at the same time competitiveness at regional and global levels. These are some of the concerns and issues addressed in the case studies reviewed in this synthesis paper.

Globalization in higher education in particular is characterized first, by the intense interest and involvement shown by governments in the development, improvement and marketing of universities in countries like China, Malaysia, Australia, and India. The European Union is also moving towards a harmonized system of higher education through the Bologna process. Secondly, development of private universities has become an important aspect of higher education, especially in developing countries. The entry of private investors into the sector is thus breaking state dominance in the provision of higher education (Varghese, 2008).

Thirdly, higher education has become an arena for stiff competition for staff, recognition, resources and much more so for the growing numbers of internationally oriented students. The competition is both local and international. The originating countries and institutions want to retain their students to minimize brain drain, while the receiving countries and institutions desire to attract them for economic or intellectual reasons (improving and enhancing intellectual capital). With the decline in state funding in some countries, universities are also hunting for fee-paying foreign students to enhance their incomes.

Fourthly, there is a strong process of internationalization of institutions: universities want students mix and diversity; they are attracting international staff and providing programs that have a wide appeal and where teaching and learning is done in English - the language of business, research and technology. The development of borderless institutions that offer education without the limitations of national boundaries and regulatory institutions is part of this phenomenon. The possibilities of attending courses and programs offered by campuses of leading institutions in your vicinity are shaping the imaginations of students and parents. Access to quality and international "brands" in education has become a strong propelling force. Cross-border providers have therefore become very important in Africa, leading to all manner of collaboration with local institutions to meet legal and quality assurance requirements.

Finally globalization of higher education is also marked by intense marketing of courses, degree and research programs intended to attract students, academic talent and resources. Regionalization of higher education or the mobility of students within the various geographical regions of Africa is increasing. Many Nigerian students now enroll in Ghanaian universities while there is a growing mobility of students between Kenya and Uganda. These developments bring into sharp focus the need for reciprocal recognition of qualifications and an overarching agency that can coordinate collaborative activities of national quality assurance agencies, professional registration boards, and examination boards.

## **2.2 Higher Education in National Development**

African countries recognize the potential of higher education in driving high levels of economic growth, overall improvement in living standards and better livelihoods of their populations. The recent positive experiences of Asian countries have had a special attraction and admiration in Africa. Hence discourses on EFA and MDGs in Africa need to be placed in the local as well as international contexts, discourses and conceptions of higher education (Scott and Yeld, 2007; PUIB, 2007). The value of higher education is increasingly understood not only in terms of production of human resources, but also as a critical driver of national development and global competitiveness. Hence the functions of the university - teaching and learning, research and national service - have assumed deeper meaning and forms of engagement. While teaching and learning builds and inculcates knowledge, capacities and competences, and develops outlook and attitudes required for socio-economic development, research enterprise leads to creation of new ideas, knowledge, processes and innovations for propelling scientific and technological advancement. This is increasingly seen as a core responsibility of higher education. National service of any higher education institution is thus seen as a quintessence of this broad societal mandate.



Higher education is also perceived as an instrument through which various groups in the society access political, economic and social capital, power and status for participation in the democratic space, inclusion and overall development. It is also perceived as an instrument for equitable distribution and creation of wealth, resources and opportunities in the society. Nevertheless, the higher education sector faces a number of critical challenges: Historically, higher education in Africa has been and remained open to a privileged few. In comparison to the prevailing standards in developed countries and the emerging economies, African countries lag behind in terms of the proportion (or Gross Enrolment Ratio, GER) of the appropriate age cohort accessing higher education. This ratio is only about 5 percent, while in other countries it is close to 50 percent (Varghese, 2008). Secondly, the inequalities of the past have persisted: racial (South Africa), gender, regional and class. Thirdly, production of a balanced discipline mix, curriculum relevance and quality of skills and competences produced by higher education institutions have remained incongruent with the needs of overall socio-economic development. This has led to graduate unemployment, while at the same time serious shortages of advanced skills and specializations in various sectors and levels persist. Issues of graduate unemployment underline the fact that mere production of human resources in terms of numbers, discipline mix, skills and technological orientation is not a sufficient condition for economic development. The Asian experience seems to indicate that education development thrives well where simultaneously it is backed up by injection of domestic and external capital, infrastructural development and an enabling policy environment for enterprise to thrive.

Higher education institutions are also challenged to build close partnerships with industry, which a number of universities are now cultivating, by making their programs responsive to market demands, and building research collaboration to utilize their research output for mutual benefits. They are however often cautioned not to fall into the trap of narrowly demarcating their path of responsiveness to economic imperatives and competitiveness to the detriment of their broader mission of generating knowledge, fostering intellectual debates and cultural renaissance.

For higher education to play its expected role, governments have started to institute policy, legal and institutional reforms to facilitate the development of the sector. Such reforms include establishment of accreditation and quality assurance authorities, and student loans programs. At institutional level, reforms of governance and management, diversification of funding sources and increased investment of time and resources in research and innovation are underway. Many higher education institutions are also challenged to devise strategies and responses to the issue of HIV/AIDS as well as the consequences of wars and conflicts that have in the recent past disrupted education systems in countries like Cote d'Ivoire, Mozambique, Liberia, Kenya and Uganda. More, however, needs to be done to cope with the expected surge resulting from expansion of secondary education in many African countries. Higher education in these and other ways then adds impetus not only to global and regional integration but also national socio-economic, scientific and technological development. Promoting equity of access and outcomes, whether nationally or regionally, is an essential condition for meeting national needs for knowledge workers, competent leadership and innovations. The challenge for us in Africa is to analyze and fully understand how these global, regional and national dynamics are, and will continue to shape the articulation of secondary education with provision of higher education and training.

## **2.3 Concepts and Definitions**

Upper secondary education caters for students in the age group of 15 to 19 years, and is offered in a wide range of institutions. While this is the case, it does not necessarily refer to the same level of education as evident from the definition given below. In this context, upper secondary however refers to formal schooling. However as it will be noted later on in the review of country case studies, access to university and other institutions of higher education is not confined to those from formal education as it is increasingly widening to include those with non-formal, technical and informal learning and experiences. Below we provide working definitions of terminologies and concepts utilized in this synthesis paper.

### **2.3.1 Upper Secondary**

In this paper, the term “upper secondary” refers to all types of education and training beyond lower or junior secondary (including vocational education and training) that mark the end of the second cycle of education. We do recognize however the problematic of this definition, since the notion of upper secondary varies from country to country. In Kenya and Mozambique, for example, it is the last two years of the 4-year secondary school cycle that constitutes upper secondary; in Ghana, it is (since September 2007) the 4 years of senior high school or senior secondary education; while in Uganda, the two years of the sixth form constitute upper secondary, although the selection for further education is really done at the fourth form level after four years of secondary education. In Francophone countries, we may assume that upper secondary corresponds to the 3 years of lycee. In view of this problematic, we will simply define upper secondary as the final segment of secondary education cycle before entry into employment, vocational and skills training or higher education. This corresponds to the age group between 15 and 19 years.

### **2.3.2 Higher Education**

The term “higher education” is used here to embrace all types of post-upper secondary school education and training offered by universities and non-university tertiary institutions such as polytechnics, professional training institutes and colleges of further education. The higher education landscape as it will be noted in various African countries is highly differentiated and involving multiple providers.

### **2.3.3 Articulation**

The term “articulation” refers to both horizontal and vertical linkages, partnerships and synergies that facilitate the transition from upper-secondary education to institutions of higher education and training. “Articulation” raises the questions of how the curriculum and programs offered at upper secondary school level are aligned and inter-connected to those offered at higher education and training to realize continuity and progression in acquisition of knowledge and skills and overall learning. Thus the concept as used in this paper refers principally to the vertical linkages between upper or senior secondary and higher education and training. In other words, articulation is defined as the upward mobility or movement of students and their qualifications from upper or senior secondary to higher education and training institutions. Although the primary concern here is the vertical articulation, the horizontal component or articulation between university and non-university higher education institutions cannot be ignored. Indeed this type of articulation remains a serious concern in Africa, as it has major implications for inter-linkages and the overall cohesion of the entire education system.

The different dimensions of articulation cannot be discussed without the notion of differentiation and diversity. Differentiation alludes to similar but different types of education within the same education system (e.g. full-time or part-time, short or long duration etc). Diversity, on the other hand, refers to the variety of types of education offerings within the system (e.g. general or academic, vocational or professional). To analyze and understand the dynamics of articulation between upper secondary and higher education in various African education systems, it is necessary to appreciate these concepts.

## **3. Moving Beyond Primary Education: Articulation between Upper Secondary and Higher Education**

### **3.1 Aims and objectives of secondary education**

Secondary education is a critical stage in the development of the individual in terms of formation of character and realization of potential. It is a period when the individual starts to acquire and consolidate essential economic skills, knowledge and attitudes that may lead to employment, training and further education. The challenge in Africa is whether secondary education is providing the basic foundations which the young generation need for employability and trainability as well as competitive outlook to function in the market place, and for integration in the world of work. Individual guidance, educational and career planning are essential elements in upper secondary education as preparation for higher education, training and employment in most countries. Increasingly, this is linked to the acquisition of lifelong study and learning skills, work habits and the evaluation of personal performance.

In addition to acquisition of essential skills and knowledge, students at this stage are increasingly expected to develop creative and innovative outlook and appreciation of mathematics, sciences, and information and communication technologies (ICT). Ideally, secondary education curriculum is also expected to promote social and cultural inclusiveness, social justice, recognition and celebration of diversity of cultures and languages, promotion of democratic spaces and inculcate values of good citizenship. Globalization and the accelerated generation and changes in knowledge and competences required in the rapidly changing labor market, has brought to the fore the need for secondary education to lay the foundation for lifelong continuous learning. This is a critical stage/ transition in the development of the child and the schooling process. A period of choice and educational pathways to follow - academic, vocational, workplace, training and opportunities and transition into adult life and end of teenage period. Upper secondary level is therefore an important transition period in relation to entry to higher education. In most African countries it marks entry into legal adulthood which qualifies the individual to vote and thereby participate in the political process.

Educationally, national assessment and certification takes on a critical dimension during this period. Assessment of student learning and achievement, through examinations or other mechanisms takes on a center stage in the education process. The case studies of Mauritius, Mozambique and Kenya have brought this to the forefront. In some countries they serve as a measure of performance and accreditation, which entitles holders to places in higher education and training, whereas elsewhere they form a critical instrument in the selection process for further education and training. The Mauritius, Kenyan and Ugandan papers have emphasized the role performance in upper secondary examinations play in allocation of the very limited opportunities in higher education. Progress to next level and admission to the available opportunities depends to a large extent on the student's performance relative to other applicants. The pressure on students, teachers, parents and institutions to meet the highest performance targets is enormous in all African countries.

Hence the power of examinations and the tyranny of assessment methods and instruments: in influencing what is taught, how it is taught, time allocation for each subject and the learning process as a whole in secondary education. The limitations placed on implementation of some aspects of the curriculum need to be recognized. The tendency is often to discourage independent exploration and development of creative activities, which are time-consuming, but are not examinable. Hence those aspects of the curriculum that are not externally assessed receive little or no attention.

In Mauritius the highly competitive nature of examinations is to a large extent responsible for limiting the scope of education, with students concentrating all their efforts on examinable subjects. Private tuition has developed as result of the domineering role of examinations in the pre-tertiary education system and their allocative function in a situation of very limited higher education opportunities. This situation is not unique to Mauritius. In countries as far apart as Ghana and Kenya, parents make a lot of sacrifices to send their children for extra coaching to other teachers or even to the same school teachers. A parallel 'industry' has emerged to take care of this need.

The intense competition for access to opportunities in higher education institutions and especially to degree programs deemed to have high value in the labor market has led to a narrow concentration on subjects which are examinable and those that improve the chances of students entering into the highly valued programs. As we have noted, examinations have a major impact on what is taught, the time allocated to various subjects and the methodologies of teaching and learning. This works against diversity in program offerings at upper secondary school level in various countries. However there is abroad acceptance that upper secondary education does offer a sound foundation in basic knowledge, skills and competences on which higher education and training institutions and employers can build upon. Questions can be raised as to whether students who spend about two years of their time in school cramming for the school-leaving exams do really acquire the skills for critical thinking and continuous learning needed to cope with emerging changes in the development of knowledge and skills.

Similarly, one can question whether the introduction of ICT education in schools, as observed in a number of countries, actually enhances student learning and teaching. This is partly because the introduction of computers in schools is a recent phenomenon and where this has occurred, accessibility to the limited numbers of computers and updating them has been problematic. A regional study conducted by the Educational Research Network for West and Central Africa (ERNWACA) in four African countries reveals that although the acquisition of ICT skills does enhance student enquiry and learning, there is no clear link between computer literacy at upper secondary school and access to or success in higher education (ERNWACA, 2007).

### **3.2 Expansion of upper secondary and higher education in Africa**

In the last two decades or so, Africa has experienced very rapid expansion of upper secondary education and tertiary education as result of increasing social demand. During this period, the annual rate of expansion of tertiary education in Sub-Saharan Africa has been about 17.2 percent. This expansion has not been limited to public higher education institutions only; as there has also been an increasing participation by the private sector in the provision and funding of tertiary institutions (Varghese, 2006 and 2008; Materu, 2007). The case studies reviewed in this synthesis paper indicate how this remarkable expansion is working in Kenya, Ghana, South Africa, Mauritius, Uganda, Cote d'Ivoire and other countries in sub-Saharan Africa. These case studies will show how the increasing expansion of upper secondary education is mediating the transition between upper secondary and higher education.

The expansion of upper secondary education has intensified the competition for higher education and especially for courses that command high value in the market place. Public universities in particular have also taken advantage of this demand to initiate programs for fee paying students in contrast to those supported through government scholarships or bursaries. The universities are very keen to expand these programs to earn much needed income for their operations. This development is entrenched in Kenya, Uganda and Ghana as the country case studies do indicate. Issues of quality assurance and relevance have also taken front stage, with institutions and mechanisms being established for this purpose in many countries (Materu, 2007). External educational agencies have also entered the local education market to provide opportunities, and earn profits on the escalating demand for higher education and qualifications (Munavu and Kithuka, 2007).

### Box 3: Tertiary enrolment pressures in Uganda

The demand for places at post-secondary education and training level in Uganda far exceeds the number of places available. This situation is likely to deteriorate with the introduction and implementation of the Universal Secondary Education in 2006. Forty percent of primary school graduates continue into secondary education while the remaining 60 percent find their way into Business, Technical, Vocational Education and Training (BTNET) institutions and the world of work (formal and informal, self-employment, etc). The 2-3 years duration BTNET institutions provide an alternative to secondary education.

Although 12,000 students leave upper secondary annually, only 25% gain access to the few government higher education institutions (HEIs), leaving the rest (75%) to be absorbed by the private HEIs. This has led to rapid growth in the higher education sector. In 1990, enrolment in HEIs stood at 17,000 compared with over 121,000 in 2006. Correspondingly, the number of universities has increased from one public university in 1987 to over 25 public and private universities in 2007.

*Source:* Ssenkaba et al., 2008

## **3.3 Issues, concerns and dilemmas in the articulation of upper secondary with higher education**

Articulation between upper secondary and higher education is characterized by a complex set of factors and issues that include: preparation of students for access and success in higher education and in particular in mathematics and sciences; acquisition of skills and attitudes needed in the world of work and further training; expansion of pathways and opportunities for access to university education; gender, regional and social inequalities; quality and relevance of upper secondary education; the inter-mediation and dominant influence of examinations and other assessment instruments; the absorptive capacity of the labor market and higher education system; and the availability and allocation of resources. There is also the interplay of the value given to higher education at household level, existing competition for the locally available opportunities, openings for foreign university education, the orientation and the rate of growth of the national economy. This interplay works in the context of national educational and socio-economic policies and practices, and the increasing influence of globalization. These issues are explored in the following paragraphs, drawing as much as possible from the evidence and conclusions of the country case studies that were commissioned by ADEA for the 2008 Biennale.

# **4. Factors Governing the Interface and Transition from Upper Secondary to Higher Education: Review of Country Case Studies and Background Papers**

## **4.1 Policy and Governance**

Government policies have perhaps the greatest influence on the articulation between upper secondary and higher education. From the case studies analyzed for this synthesis paper, one can discern the directions in which government policies are moving towards expansion and diversification of tertiary or higher education in order to cope with social demand for qualifications, skills and competitiveness in the economy. There are policies, for instance, relating the ratio of science and technology students to students in the humanities and arts as well as those aimed at bridging the gender, geographical and economic inequalities.

In Ghana, where government policy is to have a science-to-arts enrolment ratio of 60:40, public universities are encouraged to offer bridging or remedial programs in science subjects for students with borderline admission grades in order to qualify them to pursue science courses at the university. Several universities have also introduced policies that offer concessionary admission to students from deprived secondary schools, as well as affirmative action in favor of female applicants. These policies do not imply the admission of students who are not qualified for university education. All students who benefit from these policies do satisfy the basic requirements for higher education. The concession has to do with lowering the competitive admission cut-off points by a point or two in order to beat the intense competition occasioned by the limited number of places available at the university (Effah et al., 2007). In order to promote equity in educational provision, the Government of Ghana has also committed itself to establishing a well-endowed senior secondary school in each of the 138 districts of the country.

The South African education system it should be appreciated operates within a legislative and policy environment that seeks to address the long history of racial inequalities and cultural diversity in educational provision. There is a pressing need to actively redress the legacy of racial and gender inequalities of apartheid and to ensure that the benefits of higher education – the individual and public benefits – are equitably spread across all communities. South Africa is an example of a country which has articulated far reaching policies and enacted legislative frameworks intended to spur the development of equitable, quality, and integrated higher education and which is responsive to the needs of national development. One of the main policy instruments designed to improve access and articulation, both vertical and horizontal, has been the National Qualifications Framework which, to say the least, has been very controversial in some educational circles, particularly the higher education sector (Scott and Yeld, 2008; Munavu and Kithuka, 2007).

The criteria for student mobility to higher education, employment or further training involves an inter-play of several factors which include the type of upper secondary school attended (general or academic, vocational or professional) and performance in the national school-leaving examinations. The vertical articulation between upper secondary and higher education in particular, raises issues related to admission requirements, whether the curriculum offered at upper secondary is tailored to the admission requirements of various university programs, and whether the available opportunities in the universities and colleges can accommodate the ever increasing number of qualified secondary schools leavers.

In addition to direct admission of students from secondary schools, questions could be raised as to the existence of provisions and avenues for admitting students from the vocational or professional training system that could be considered equivalent to upper secondary education. It is noted that there are obstacles and barriers to entry to universities for students from the vocational stream but some efforts are being made in this direction, notably in Uganda and Kenya (Ssenkaaba et al., 2008; Munavu et al., 2007). National Qualifications Frameworks have been suggested as a possible mechanism for dealing with this problem. Existence of such a pathway to university education is becoming an important aspect of opening university education to many people who for one reason or other moved into employment or skills training at an early stage of their educational development.

The expansion of secondary education will continue to put pressure on universities to open up to accommodate not only those coming directly from schools but also those who attained qualifications through the non-formal or informal education. As stated earlier, efforts are being made in this direction in a number of countries like Ghana, Kenya and Uganda. This is commendable and can form the basis upon which Africa can widen access and go beyond the current tertiary enrolment figure of 5% of the age cohort in university education and cater for continuing education and lifelong learning in order to improve and update the skills, knowledge and competences that are needed in a rapidly changing social, economic, and technological environment. Recognition of informal education, prior and experiential learning, and creation of mechanisms and institutional arrangements to facilitate learners in these categories to access higher education and in particular university education are an urgent challenge to policymakers and providers of higher education.

All the issues discussed above on the criteria for student mobility into higher education, the admission of students from the vocational education track, and the limited absorption capacity of the universities, point to the critical character and importance of the interface between upper secondary and higher education. As the output of upper secondary education increases, all African countries face a serious challenge of management of the transition, within the context of limited public and private opportunities and resources for higher education. Hence equitable allocation of these opportunities is a matter of grave political concern. And so is the management of examinations that are utilized for the allocation. In the countries studied, the allocation mechanisms tend to favor students leaving the formal academic education system. Other educational routes are far from being given the recognition they deserve in the rapidly changing circumstances of acquisition of knowledge and skills. In order to effectively manage the factors that govern the interface as well as those on either side of the interface, it is necessary, in each country; engage the key players in the field in a policy dialogue and strategy formulation that will guide systematic development. These stakeholders include the ministries responsible for basic education and higher education, supervisory and regulatory bodies, examination councils, associations of heads of secondary schools, student organizations, professional bodies, private sector, and the universities (both public and private). In many sub-Saharan Africa countries the task of articulation of policy and indeed allocation of educational resources relating to upper secondary and higher education is the sole responsibility of the Ministry of education, a situation that calls for urgent change.

It is heartening to note that universities in Africa have embarked on far reaching reforms in governance and management, curriculum, financial reforms and accountability, and are building much needed partnerships in the development of the institutions. These reforms have profound implications not only for the institutions themselves but also their relationships and interactions with secondary education, the private sector, government institutions and other stakeholders, both local and international. The ripple effects of these changes are likely to be far reaching on the education system, households and the society as a whole (Sawyer, 2004; PUIB, 2006; Mihyo, 2007; Scott and Yeld, 2007).

#### **4.1.1 Preparation of upper secondary school students for future careers and higher education**

There is wide recognition of higher education as a provider of high level skills both for international competitiveness in the context of economic globalization and for internal development. How effectively graduates of higher education integrate into the world of work is therefore a measure of the efficiency of the system. A major concern in many African countries is the perceived mismatch between higher education and training and the needs of the employment sector. Perhaps there is nowhere else in Africa where the supply and demand disequilibrium is more pronounced than in Mauritania, where it is reported that more than 30 percent of PhD holders are unemployed and graduates from the higher education system are as likely to be unemployed as those without any form of formal education. This situation is believed to be partly linked to the absence of proper articulation between upper secondary and higher education. To redress the weaknesses within the system, Mauritania intends to build the transition from upper secondary to higher education on four pillars: diversification of program offerings at the tertiary level; improvement in teaching and learning conditions; introduction of foreign languages into the curriculum; and ICT education (Soumare and Thiam 2007).

Box 4: Poor articulation fuels graduate unemployment in Mauritania

In Mauritania, the absence of proper articulation and inability to effectively manage the transition between upper secondary and higher education has led to a state of disequilibrium between the education and employment sectors. Of the 11,000 students who enter upper secondary, only 3,000 qualify for higher education which has an absorption capacity of only 1,500. Moreover, while 22 different specializations are offered at the higher education level, only 3 options are available at the upper secondary level to feed these 22 programs. According to the Labor Department, the annual demand for higher education graduates is only about 600 compared with a graduate output of about 1,500. It is estimated that more than 47% of job seekers are holders of higher education qualifications, including doctorate degrees.

*Source:* Soumare and Thiam, 2007.

The quality of preparation for higher education at the upper secondary school has a strong effect on articulation. Equally important is whether the curriculum at this level is geared towards university education, non-university higher education, skills and professional development, or employment. We also need to ask the question of how the overall curriculum, subject choices and combinations offered at upper secondary level are aligned to or articulate with the requirements of entry into higher education institutions (Munavu et al., 2007).

In most countries in Africa there is a tendency to concentrate on the needs of those students who will proceed to academic and professional programs and ignore the fact that the majority of upper secondary leavers do not end up at the university (Munavu et al., 2007). It is obvious, where this is the case that the upper secondary curriculum does not articulate well with the needs of technical and sub-professional education and training. This is another instance where the training needs of technical and sub-professional cadres are ignored in favor of development of university education. The case study of the Namibia College of Open Learning (NAMCOL) is however unique in this respect. NAMCOL offers opportunities for learners from informal or non-formal backgrounds to re-enter the formal system through an alternative mode of participation in secondary education (Mayumbelo et al., 2007). On the whole there is lack of coherence in the curriculum offered at upper secondary level with that offered in higher education institutions. Evidence from the case studies indicates that this is a matter which has yet to be given adequate research or policy attention.

The preparation of students for higher education is also influenced significantly by the differentiation and inequalities in provision at the upper secondary school level. Inequality of provision in this context refers to regional and socio-economic inequalities that limit the chances of students from disadvantaged backgrounds to enter the better endowed upper secondary schools. Quota systems and affirmative actions are policy vehicles that are being used in some countries to deal with these kinds of inequalities. Differentiation refers to situations whereby students are channeled into academic or vocational streams which do not provide a level playing ground for success and competition for all students wishing to enter, in particular, university education. In some countries, this inequality in provision translates into a situation where only a handful of the best secondary schools provide the bulk of university students. In other words, the inequalities at upper secondary are reproduced at the higher education level. Apart from socio-economic factors, these inequalities are also sometimes driven by historical, geographical, regional, gender and ethnic factors.

The complexities and inter-relatedness of the above factors in the development of secondary education tend to be reproduced not only in the transition to, but also in success in higher education. The South African case study has brought out strongly the issue of inadequate preparation of historically disadvantaged students accessing higher education, even when they perform well in secondary school leaving examinations. In short they are not well prepared for success in undertaking higher education (Scott and Yeld, 2008). Hence the need for formulation of policies that address issues of equity comprehensively at all levels of the education system and in the society, and not to assume they can be adequately dealt with at the tail-end of the education system.



#### 4.1.2 Enrolment capacity of higher education institutions and programs

The slow expansion of the higher education systems in many African countries has limited their capacity to increase enrolments in tandem with social demand, thus limiting the chances of upper secondary school graduates to acquire higher education. The problem is compounded by inadequate differentiation and diversity of the institutions and programs at the higher education level, leading to a reduced opportunity for selection and choice by prospective students. This situation is illustrated by data (Table 4.1) from the Kenya case study (Munavu et al. 2007).

Apart from the enrolment constraints at the higher education level, the other key factor affecting the rates of transition from upper secondary to higher education is availability of resources to finance the costs of higher education. The role and dominance of the state in funding of higher education is gradually coming to an end with entry of private investors and the expectation that students should contribute to the cost of their education. In some countries student loans have been introduced to cater for this need. The universities have also opened their doors to fee paying students, a development that has improved their financial resource base while increasing opportunities for the economically able household to give their children university education. One university in Ghana is reported to have generated about US\$ 4million in only one academic year from fee-paying students (Effah et al., 2007). The policy of enrolling fee-paying students raises issues of equity as such policies block out students from poor households and encourages the commercialization university education. Interestingly, however, this policy has not received much public criticism as one would expect, suggesting that the proportion of fee-paying students may increase, not diminish (Mamdani, 2007). There is growing pressure for governments and institutions to remove the existing categorization of students (PUIB, 2006). However this will not be realized unless policies on fees paid by all students are harmonized, and institutions and mechanisms are in place to support qualified students from poor backgrounds to access higher education.

Table 4.1: Annual trend of the number of qualified applicants (candidates with C+ and above) versus those actually admitted into Public Universities in Kenya (2000-2006) for the last seven years

Candidature	2000	2001	2002	2003	2004	2005	2006
No of candidates	181,984	194,993	198,356	205,730	219,405	260,653	241,313
Increase in candidature	9,101	13,009	3,363	7,374	13,675	41,248	-19,340
No at C+ and above	40,497	42,160	42,726	49,870	58,239	68,030	62,926
% of C+ and above	17.74%	22.25%	21.63%	21.24%	26.54%	26%	26.1%
No admitted to public Universities	8,899	11,147	11,046	10,791	10,200	10,000	16,000
No of qualified but not admitted	30,497	32,160	32,726	39,870	48,239	58,000	46,929

Source: Kenya National Examinations Council, 2005; CHE, 2006 (from Munavu and Kithuka, 2007)

It should also be noted that the recent development of higher education is characterized by an increasing number of university institutions that offer short duration, market-oriented certificate and vocational courses while non-university institutions are beginning to aspire to university status by offering degree programs, or admitting students with university-level admission qualifications. Indeed, some polytechnics in Mauritius are said to be operating as “mini-universities” (Bissoondoyal et al., 2008). This phenomenon which has been termed ‘academic drift’ and ‘vocational drift’ has implications for not only the transition to higher education but also for the identity and mandate of higher education institutions (Ng’ethe et al., 2007).

Another issue that needs to be noted is the intense competition for the limited opportunities available at higher education and training in Africa. The expansion of public universities, the development of private

universities, availability of foreign opportunities or cross border education has not eased, and is not expected to ameliorate this situation soon. Hence the transition from upper secondary to higher education needs to be analyzed and understood in the context of expansion of secondary education as part of the EFA strategy, demographic changes in African societies and current national and international policies and strategies towards increasing the proportion of the relevant age group that accesses higher education. The competition for admission is most noticeable among professional programs and courses that have a high market value (Munavu et al., 2007; Mamdani, 2007). This intense competition for places at the university has serious implications for learning at the upper secondary level in terms of a tendency towards rote learning, narrowing the focus on the curriculum, repetition and private tutorials (Bissoondoyal et al., 2008). This situation also has equity and quality implications at the secondary school level, as well as subsequent learning in higher education institutions. Policymakers and educators alike are aware of these undesirable learning outcomes and class inequalities that are engendered by the intense competition for university admissions, but are unable for various dominant (personal, political or economic) reasons to institute any credible measures that would change the current situation.

#### **4.1.3 Accreditation and quality assurance**

Accreditation and quality assurance have become critical issues in the development of tertiary education in Africa. This has been spurred by a strong and persistent perception that the quality of higher education has declined as a result of increased enrolment without a marching increase in unit cost, decline and lack of qualified staff and the existing internal and external inefficiencies in the management and governance of institutions in the sector. The rapid increase in the development of private universities and cross border providers of higher education in the last three decades has also led to the emergence accreditation and quality assurance bodies and insistence on all institutions in the sector to be subject to processes of quality review and assurance (Materu, 2007).

National accreditation agencies determine the number and type of higher education institutions (both public and private) that are legally authorized to operate and offer qualifications that are recognized. Accreditation therefore has a significant influence on articulation, since the options for higher education available to graduates of upper secondary are influenced and in some instances limited by the number of accredited higher education institutions. In most African countries, institutions for accreditation and quality assurance in higher education have been established and are playing a critical role in the development of the higher education sector, especially in the expansion of private universities and cross-border higher education. However, these newly created institutions are often hindered in their work by lack of necessary capacity and resources to carry out their mandates and responsibilities effectively.

Hence, the governance, management and staff capacities of these bodies require strengthening in order to meet the urgent and rapidly increasing need for external quality assurance in higher education. A number of concerns have been raised about the quality assurance mechanisms in many countries, especially about the nature and credibility of the accreditation process and how the accreditation agencies carry out this function. Public university institutions are often hostile to external accreditation and quality assurance, considering such activities an intrusion into their functions as autonomous academic institutions of higher learning (Mihyo, 2007; Materu, 2007). A more fundamental question is how processes of national accreditation and quality insurance influence the content and quality of upper secondary education, if at all. Equally important is how they impact on competition for access to universities and specific academic and professional programs. As external quality assurances and accreditation bodies and processes become well established and effective, higher education institutions are encouraged to strengthen, and where necessary build a culture of quality within each institution which would inevitably form a platform for external quality assurance.

#### **4.1.4 Articulation and differentiation between university and non-university higher education institutions**

University and non-university institutions such as polytechnics and professional training institutions constitute the bulk of the higher education family. It is clear therefore that national policies that encourage or im-

pede academic dialogue between the two institution types can have significant implications for student mobility from upper secondary to higher education. Better horizontal articulation between university and non-university institutions can enhance access to higher education opportunities and choices available to upper secondary school graduates. Backward and forward linkages between the two types of institutions will lead to greater mobility of students upon completion of secondary education. The benefits that can accrue from such a highly articulated system include improved access, increased program choices, credit accumulation and transfer, recognition of prior learning, life-long learning and increased inter-institutional collaboration (Ssenkaaba et al., 2008). This could be a source of synergy and complementarities in tertiary education. Differentiation and diversity of program offerings presents school leavers with wider higher education choices that match their aptitude, academic potential, socio-cultural background and financial status (Scott and Yeld, 2008; N'gethe et al., 2007).

#### **4.1.5 Regional cooperation**

Regional cooperation, as one of the studies (Munavu and Kithuka, 2007) has indicated, is another way forward that would facilitate credit transfers, recognition of qualifications, minimize costs and allow for sharing of existing capacities and experiences. This is not a new phenomenon in Africa, as the development of higher education in colonial and indeed the first or two decades of post-colonial period it had strong regional character. In the recent past it has developed with minimal governmental encouragement, but strongly promoted by the private sector. Higher education can be a powerful instrument for accelerating regional cooperation and integration. Student mobility within regional economic blocs can better flourish within the framework of mutual recognition of academic qualifications. Regional umbrella organizations like the Association of African Universities (AAU), the Commonwealth Association of Polytechnics in Africa (CAPA) and the Inter-Universities Council of East Africa (IUCEA) can contribute to the harmonization of qualifications and regional qualifications frameworks (Munavu and Kithuka, 2007; Materu, 2007).

## **4.2 Financing**

A major constraint to expansion of education at all levels is availability of financial resources. In most African countries education takes the largest slice of the annual recurrent budget, and is in competition with other public services such as infrastructure, health, agriculture, poverty alleviation and security. Hence the first challenge that the education sector faces is to ensure that it maintains and increases its budgetary allocation in light of other public needs, priorities and persistent fiscal austerity. Once the education budget is set aside, there is also the challenge of cultivating a healthy balance in allocating the resources efficiently and fairly between various levels of education. In Kenya the bulk of the education budget goes to primary education while secondary education takes the other big chunk, leaving about 12% for university education. This pattern, with minor variations, tends to be repeated elsewhere in Africa (PUIB 2006). With the growing expansion of basic education (primary and secondary) and the increasing demand for higher education, African countries will find it difficult to maintain the current levels of public expenditures, even with the expected economic upturn and annual growth in the range of 5 percent. Annual education budgets are unlikely to grow above the expected rate of economic growth.

Given the continuing fiscal austerity of national governments, increased participation of the private sector in providing secondary and university education is both expected and welcome. Incentives to accelerate private participation are hardly in place though. There is therefore urgent need to develop policy instruments to encourage increased participation by private entrepreneurs in establishing and funding institutions of higher education. Such policy instruments include tax exemptions on some education goods and services, provision of government land, infrastructure provision such as roads and internet connectivity, scholarships for staff development, etc (Varghese, 2008). There are also strong indications that households will be required to contribute more toward their children's university education. This has started in a number of public universities in Kenya and Uganda where fee-paying students are admitted into parallel programs to those supported through government funding. The fee paying option as practiced in Ghana, however, admits students into mainstream courses, not parallel programs. The policy is based on filling admission quotas reserved for qualified students who do not meet the competitive admission cut-off points but are able and willing to pay

the full cost of their training. Universities are becoming entrepreneurial and are engaging in income generating ventures, including the establishment of business entities and companies. Some universities are also entering into partnerships with private sector investors with a view of turning research results and innovations into commercial products. In the coming years these initiatives will become important features of funding higher education in Africa.

State dominance in funding higher education sector is in gradual decline. And there is evidence that some universities are taking up the challenge of generating substantial amounts of money to meet their operating expenses. It is reported that the University of Technology in Mauritius, a public university, generates as much as 70 percent of its recurrent expenditure requirements (Bissoondoyal et al., 2008). A number of public universities in Kenya are generating close to 50 percent of their recurrent expenditures from their commercially oriented programs. And as mentioned earlier, the Kwame Nkrumah University of Science and Technology in Ghana was able to generate as much as US\$ 4million in one academic year from fee-paying students alone. As public financing dwindles, institutions of higher education will in turn be required not only to diversify their sources of funding, but also utilize the available resources more prudently and effectively (Sawyer, 2004; Mihyo, 2007; PUIB, 2006). Governments need also to rethink how they allocate available resources for higher education. There is need, for instances, to articulate what programs are of strategic value based on national development priorities that would merit sustained or special public funding. Tanzania has taken this step in allocating student bursaries for certain higher education programs (Munavu and Kithuka, 2007). Performance-tied funding was not identified in any of the commissioned case studies, but it could become a major incentive for quality improvements and prudent utilization of available resources.

To attract additional funding to supplement public and internally generated resources, accountability and transparency will become imperatives for each institution. This is an important element if they are to attract funding from philanthropists, external donor agencies and the private sector. At the same time, they will be required to come up with mechanisms for supporting qualified but underprivileged students to access higher education. Student loans schemes that have been introduced in some countries will be one way to deal with this problem, but the institutions themselves will also have come up with creative strategies of ensuring their doors remain open to poor students in the society (PUIB, 2006; Nyamute, 2007).

Box 4: A tale of two universities in Mauritius

Universities in Mauritius are becoming more entrepreneurial in seeking additional sources of funding, some succeeding more than others. The funds generated annually by the University of Mauritius, essentially through tuition fees, amount to about 20% of the university's recurrent budget. By comparison, the University of Technology, Mauritius (also a public university) generates approximately 70% of its recurrent budget.

*Source:* Bissoondoyal et al., 2008

Middle colleges and training institutions have been financially neglected as countries move ahead to create more universities (Munavu and Kithuka, 2007). However, if these tertiary institutions are to produce the middle level technical and sub-professional cadres for the revitalization and sustained growth of African economies, then their funding and modernization need to be addressed. The current neglect of the non-university higher education sector poses a real challenge for the articulation upper secondary education with the training and employment needs of the society and economy. A differentiated higher education system is necessary for a balanced production, getting the right mix and management of knowledge, skills and competences needed for national development and global competitiveness.

The current levels of public expenditure on higher education are not sustainable given the current demand for higher education. Partnerships involving the state, local authorities, households, donors and the private sector are thus required for higher education to respond effectively and creatively to the increasing numbers of graduates from the expanded secondary education system and the needs of lifelong learning (Sawyer, 2004; PUIB, 2006; Varghese, 2008). Nevertheless, it must be noted that quality higher education rests on the foun-

dition of quality basic education. Hence the need not only for a balanced allocation of the education budget between basic and higher education but also concerted efforts to improve the quality at the lower levels of the education ladder (Verspoor, 2005).

### 4.3 Access and Equity

The persistence of the challenges of access and equity is widely evident as students from upper secondary school transit into university, non-university institutions or the world of work. These challenges are particularly acute in countries like Ghana, Kenya, Mauritius, Mozambique, and Uganda. The access rates into universities and non-university institutions are analyzed in terms of how the existing demand is met or not being met. The evidence points to tertiary enrolment ratios that fall well below international standards, a fact which has intensified the search for various strategies and pathways to widen access to higher education. The data from all countries we have reviewed bring out the stark realities of the challenges that countries in Africa face in the context of expansion of secondary education and the rising demand for higher education. Access to higher education is often analyzed in the context of university education. There is need, however, to discuss access to higher education concurrently with opportunities for access to non-university institutions such as polytechnics, professional and skills training institutions both public and private.

This leads to the next complex and persistent question of how equitably the existing opportunities at the point of transiting to the next level are distributed. The case studies and background papers have brought out the nature and extent of how inequalities that exist at secondary school level tend to be reproduced and amplified as students transit from upper secondary to higher education. The gender, regional and socio-economic inequities tend to be entrenched the higher one moves up the education ladder, and in particular in the professional and highly marketable degree programs (Munavu and Kithuka, 2007; Bunyi, 2008)

#### 4.3.1 Gender dimension

The case studies from which this synthesis paper is drawn amply discuss gender policies specifically in favor of the mobility of female students from upper secondary to higher education. Some of the policy interventions include affirmative action measures such as the lowering of admission points for women; remedial courses and women-only scholarships; re-entry policies for pregnant girls; sexual harassment policies to stem dropouts; provision of boarding facilities and single-sex institutions; and programs to engender conducive learning environments such as increasing the numbers of women in institutional leadership and senior academic ranks, as well as gender mainstreaming of educational provision (Bunyi, 2008).

Table 4.2: Trends in Gross Enrollment Ratios (%) in Different Education Levels in SSA

	1990				2000				2004			
	Total	M	F	GPI	Total	M	F	GPI	Total	M	F	GPI
Primary	74.1	80.9	67.3	0.83	81.5	86.7	76.3	0.88	91	96	85	0.89
Lower Second	---	----	----	----	----	----	----	----	36	41	32	0.78
Upper Second	-----	----	----	----	-----	-----	-----	-----	23	25	20	0.78
Tertiary	1.6	2.4	0.9	0.38	2.5	3.3	1.3	0.48	5	6	4	0.62

Source: UNESCO 2003 & 2006 EFA Global Monitoring Report (reproduced from Bunyi, 2008)

Bunyi's paper (Bunyi, 2008) has elucidated on the nature and extent of the gender inequities in the transition between upper secondary and higher education in SSA countries, and how these inequities are manifested and in some case magnified in higher education and especially for females from educationally and economically marginalized areas (Table 4.2). In addition the paper has highlighted the obstacles that prevent girls and women from transiting to, and participating effectively in higher education. The study has also critically analyzed policy and program interventions that have been undertaken in a number of African countries to deal

with gender inequalities in upper secondary and higher education. These interventions include affirmative action in favor of female candidates, programs to combat sexual harassment and gender-based violence, increasing the number and raising the levels of women academics and administrators. Other interventions have included coaching programs especially in SMT, provision of boarding facilities and gender sensitization and training programs. These kind of interventions have however not been limited to upper secondary or higher education but have been implemented at all levels of the education system.

In Ghana, for example, a number of universities have admission policies that lessen the competition burden female applicants face. The University for Development Studies has an even more radical gender policy under which all female applicants satisfying the basic entry requirements are admitted into any program of their choice, including the sciences. These interventions have led to significant expansion in female enrolment in all public universities and enabled females to enter the professionally oriented programs previously considered the preserve of their male counterparts. Interestingly, these female students once enrolled perform very well, graduating with very good degrees (Effah et al., 2007).

Important as these measures are, it must be noted that gender inequities permeate the entire education system, requiring that they be tackled systematically at all levels of the education ladder. African governments should therefore ensure that the interventions which are presently carried out under the auspices of NGOs and international agencies are mainstreamed and up-scaled into policy, planning processes and structures of all sub-sectors of the education system, otherwise their sustainability will be endangered once donor funding is not forthcoming (Bunyi, 2008).

#### **4.3.2 Bridging and remedial courses**

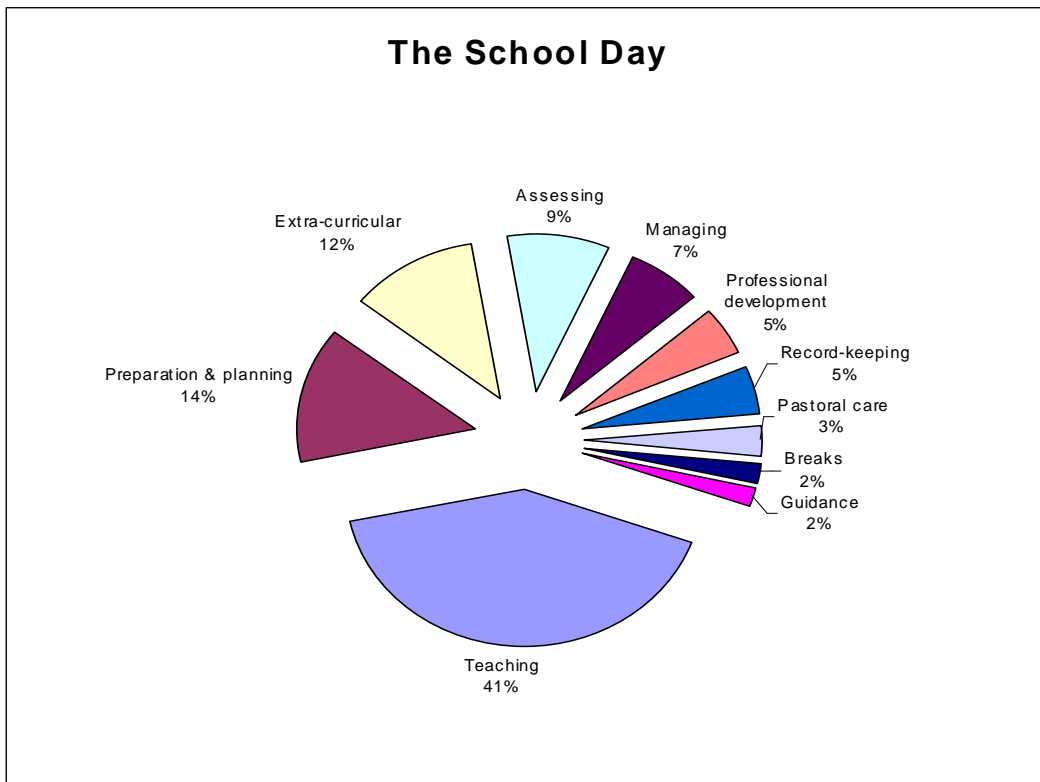
Some higher education institutions Kenya, Uganda, and Ghana offer customized bridging courses for upper secondary school graduates and others who do not fully satisfy direct or regular admission requirements. The implications of such remedial and topping-up courses is that they do give second chances to student who fail to meet the admission criteria or cut-off point for admission into the university or their desired programs. This facilitates the entry of students who otherwise would have been shut out of higher education to gain access to degree programs of their choice. Private universities in Kenya and Uganda have initiated programs of this kind. In Ghana it is the public universities that have pioneered this initiative. The University of Cape Coast has been offering remedial programs since the 1970's mainly in science subjects. Although the program was discontinued for some time, it was re-introduced in 2003. The number of students admitted into the remedial programs peaked at 770 in 2004/2005. Remedial students are normally admitted into a one-year preliminary program in the sciences and those who excelled in the final assessment were automatically offered admission into the mainstream.

Since bridging courses are often offered on a full fee-paying basis, this practice could raise issues of affordability and equity. Like students in parallel degrees programs in Kenya and Uganda, individual economic ability plays a critical role in accessing this service. Nevertheless, these measures do help in increasing opportunities for transition from upper secondary to higher education for students who otherwise would have been shut out. These measures recognize the insatiable appetite for higher education in Africa. Although the numbers are not large, they do nevertheless enable African countries to strive towards achieving slightly higher tertiary enrolment rates from the current rate of 5 per cent. It should however be recognized that these interventions are actually trying to remedy the unsatisfactory outcomes of upper secondary education. Bridging this "articulation gap" requires interventions that promote quality delivery at the secondary school level. The South African study has made a case for universities to play an increasing role in providing remedial programs to ensure success of students who are inadequately prepared for university education, although qualified for admission (Scott and Yeld, 2007). Some universities also run mature student entry programs that facilitate the articulation of non formal education, lifelong and experiential education with higher education. Makerere University has been running a very successful program of this kind for decades now (Ssenkaaba et al., 2007).

## 4.4 Education and Training of Education Personnel

Pre-service training of teachers, administrators, and school managers for secondary schools in Africa is undertaken in tertiary institutions - colleges and universities. Hence these institutions influence to a large extent the content and methodologies of teaching and learning at the upper secondary school level. In addition the personnel who end up in policymaking, management and administration of the education system at secondary school level are trained in the tertiary institutions. Consequently, higher education institutions in Africa can and do exercise enormous influence over other levels of the education system. This then is one clear way that higher education articulates and influences what is learnt and how learning is organized and managed at secondary school level. This should be given attention in the analysis of the articulation of the two levels of education. In particular, it may be necessary for universities to design specific courses to adequately train education personnel in policymaking and implementation as, very often, top personnel of the education system may not have the relevant training for the job they are required to do. Availability and distribution of teachers particularly in critical areas of learning such as science, mathematics, languages and technology should also be given attention. This relates to quality and adequacy of preparation of students for higher education and training.

Figure 4.1: How teachers spend their time (Chisholm et al 2006)



Source: Data on teacher time drawn from a study commissioned by the Education Labour Relations Council 2005, reported in Chisholm et al (2006) and quoted from Scott and Yeld (2008).

It must be noted that learning deficits at the upper secondary level constitute a serious barrier for school leavers to meet the intellectual demands of higher education. Teachers at upper secondary school therefore have an important role to play in bridging the articulation gap with higher education. How effectively is teaching done at the school level? The results of a South African study reported by Scott and Yeld (2008) are interesting. One major problem revealed by the study is the mismatch between what teachers actually do during the school day and what the educational authorities assume they do (Figure 4.1). The study reveals that

teachers spend only 41% of their time actually teaching when the educational planners assume that they spend up to 85% actually teaching.

The paper on *The Role and Contribution of Higher Education to Improving the Quality of Basic Education* (Obeng et al., 2008) has indicated the role and the contribution of faculties of education, institutes of education, research institutes and other branches of higher education institutions can make in improving basic education. All over sub-Saharan Africa there are tertiary institutions (schools, institutes and faculties of education) which are dedicated to the formation and production of education personnel - teachers, curriculum experts, administrators, school managers and educational researchers - that are required each year for the functioning and expansion of the education system. In addition to pre-service training they do undertake interventions and research to improve various aspects of education at lower levels (e.g. teaching of math and sciences, building language competences, dissemination of innovations, in-service training, etc). Unfortunately, the commissioned case studies and papers did not pay much attention to these forms of articulation and in particular as they relate to upper secondary education. It is however necessary to point out that universities can make enormous contribution to improvement of the quality and management of post secondary education through carrying out systematic research on the ongoing reforms and interventions being carried out by governments, NGOs, international partners and communities. This brings us to the broader issues of the ongoing discourses since independence on the mission of African universities to their societies. Critical questions do arise as to their commitment to the endogenous development of Africa, as reflected in their research activities, programs and overall orientation (Odora-Hoppers, 2008). While these forms of articulation of higher education institutions and the aspirations of their societies are important, they were nevertheless not the focus of this synthesis.

#### **4.5.1 Linkages between upper secondary and higher education.**

While secondary education curriculum tends to be reviewed periodically, the universities have autonomy in terms of the curricula they offer and how it is implemented. The Kenya case study has observed that the curriculum offered is often not opened to external review and input. A number of concerns arise from this situation. First is the absence of critical analysis and dialogue as to how changes and innovations implemented at the upper secondary level articulate with university curriculum and programs. While university professionals are involved in curriculum reforms at secondary school level, there are no reciprocal arrangements when it comes to discussions related to reforms of university curriculum and programs. This may lead to incoherence between the two levels (Munavu and Kithuka, 2007; Mihyo, 2007).

The second concern relates to lack of mechanisms in the universities and other tertiary institutions for dialogue and exchange among themselves and secondary level educators when they initiate and implement curriculum reforms. The tendency is for each university to evoke its autonomy and undertake the reforms it deems fit without consultations with stakeholders. In some instances professional associations and licensing boards are consulted and involved in the process, but secondary school curriculum planners are hardly involved, and yet they play a critical role in preparation of students who end up undertaking the curriculum offered in the universities.

The emergence of external quality assurance bodies in various countries is expected to ensure that curriculum reforms in higher education institutions are undertaken and critical stakeholders are involved in the process. This may help to eliminate duplication of courses and programs and better utilization of existing personnel and facilities. External quality assurance authorities also have a role to play in strengthening the processes and structures for internal quality assurance and [overall quality standards of university education](#) (Materu, 2007; Mihyo, 2007).

#### **4.5.2 LMD Reforms**

Countries in francophone Africa are currently embarking on far-reaching university reforms that seek to divide university education into three distinct levels: Licence – Masters – Doctorat (LMD). The LMD reforms bring into sharp focus the need to review and align the secondary school curriculum with the proposed



changes at the university in order to ensure better articulation between the two levels (Avo Bile Ehui et al., 2007). The report on the implementation of the LMD reforms at the University Cheikh Anta Diop (UCAD) in Dakar, Senegal shows that such fundamental reforms, in order to succeed, need to incorporate a review of the university legislative and regulatory frameworks, flexibility and transparency in managing the reforms, a participative approach and support from students (Ndoye, 2007).

## 4.6 Articulation and Assessment

Examinations are the most powerful instruments that mediate the transition from one level of schooling to the other. The critical concern is how the students are assessed and certified at the end of upper secondary school level, and how that assessment is linked to access to the next level of education, training or employment. In most countries assessment is based on the results of a single final examination administered by a local agency or external examining body as is the case in Mauritius. In most African countries, national examination councils do exist for the purposes of conducting examinations and certification at various levels of the education system. Examinations play a critical role in mediating the process of transition between the two levels of the education system. Performance in the national examination is the accepted system of allocation and admission to higher education institutions.

In countries like Kenya, Mauritius, Tanzania and Uganda admission into higher education institutions is centralized under the auspices of a joint admissions board. Centralized admission systems allow for equitable and transparent allocation of the available opportunities in public universities in these countries. In Mozambique, on the other hand, each individual institution sets up its own admissions standards which may vary from year to year. The country is however under pressure to have a national system to mediate admission into higher education institutions (Chilundo et al., 2007). However private universities in most of these countries have their own selection mechanisms, which while taking cognizance of performance in the national examinations, allow them to modify admissions criteria to include candidates with non-formal qualifications and those who have taken remedial courses. This in effect allows private universities to set their own criteria which go beyond academic performance in the national examinations. The different admissions policies and practices need however to be harmonized in each country. In a region like East Africa where mobility of labor is being proposed as part of regional cooperation and common market, harmonization would allow for credit transfers, comparability and recognition of qualifications attained on the completion of various academic programs and professional training (Munavu and Kithuka, 2007).

There is also a phenomenon in some African countries where upper secondary students are prepared for international examinations for entry into foreign universities (Munavu and Kithuka, 2007). Recently, this trend has assumed great prominence with entry into the African scene of recruitment agencies for universities in UK, Asian countries and Australia.

As observed elsewhere in this synthesis, examinations do have serious backwash effects on learning and teaching of upper secondary school curriculum and consequently impacting on the knowledge, skills and competences acquired at end of secondary education. The success of upper secondary education is thus assessed on the basis of performance in the examinations and not necessarily on the potential of students to succeed in higher education and training. Curriculum innovations that are deemed not in tandem with this goal are often ignored by teachers, students and parents.

## 4.7 Education Management Information Systems (EMIS)

Education policy analysis in Africa suffers from a dearth of educational statistics. The Kenyan case study and other studies have underlined the major challenges facing education systems in Africa in terms of availability of valid, reliable and up-to-date statistical data. Reliable educational statistics not only facilitates tracking of the articulation of upper secondary with higher education institutions, but also ensures the scientific monitoring of the entire system for informed decision making, planning, management and allocation of resources (Munavu and Kithuka, 2007) The background paper on gender (Bunyi, 2008) has recommended

institutionalizing the practice of collecting, analyzing and utilizing gender disaggregated data on all aspects of education planning and policymaking. An effective, efficient and reliable Education Management Information System (EMIS) is necessary to facilitate the smooth flow of information and data to policy makers, planners, managers, and other stakeholders at all levels of education and training (Nyamute, 2007; Bunyi, 2008; Mihyo, 2007).

## 5. Conclusions

Countries in sub-Saharan Africa recognize that their future development will be driven by knowledge and hence the need to invest massively in secondary and higher education. Higher education will give them a much needed platform for generation, adaptation, acquisition and utilization of knowledge and innovations to realize and accelerate social, economic and technological development. This objective however cannot be realized without investing heavily in quality basic and higher education which is accessible and equitable to all groups in the society. As African countries expand their educational systems they need to pay serious attention to critical issues of financing, governance and management of the education enterprise, as well as the equity, quality and relevance dimensions of education provision. How these issues are dealt with as one student cohort transits from one level to the other is equally important as how they are mediated within each educational level. A crucial issue in this discourse is how upper secondary education relates and interacts with higher education to produce successful, knowledgeable, skilled and competent human resources to drive, manage and inject new and innovative ideas in the economy and the society.

The case studies reviewed for this synthesis paper have looked into issues of access, equity (gender, regional and to some extent social class), quality and relevance of preparation of students in upper secondary for higher education. The role of examinations in mediating pathways and the allocation of places in higher education is also given attention. In a number of countries, it was observed that examinations play a crucial role in determining not only the way teaching and learning is done in secondary schools, but also the curriculum content that is emphasized and implemented. The quality of secondary education is also influenced by the perception of teachers, students and parents on how the limited places in higher education are allocated. Secondary education is therefore a preparatory theater for the intense competition experienced in the transition and access to higher education. The main concern then is whether secondary school students are adequately prepared for access and to succeed in higher education, as well as for life-long learning.

The findings of the case studies do indicate that the demand for higher education in Africa will continue to escalate, calling for additional funding and investment in the sector. The role of the state will become much more of regulating and building effective governance structures and formulating policies. The growing partnership of state and private providers will certainly have to be strengthened and expanded. This could bring much needed additional financial resources into the sector. Availability of resources for research and training personnel for the sector will remain a tricky issue. Regional cooperation in higher education is expected and mechanisms for this to happen will be needed. The higher education sector is challenged to rethink how it will articulate with secondary and other levels of education. Higher education institutions may continue to provide remedial programs to prepare students for increased access and success in higher education, but they will be required to go beyond this intervention. They will need to give more attention to the quality of preparation of secondary school teachers and undertake research to strengthen teaching and learning at the lower levels of education.

While the case studies reviewed in this synthesis have not exhaustively dealt with the many and complex issues relating to articulation of upper secondary education with higher education, the studies have nevertheless highlighted some of the critical issues needing policy and careful planning in the decades ahead. For this purpose, accurate and reliable data on the expansion and dynamics of development of upper secondary and its articulation with higher education need to be generated and maintained. This is also needed at the institutional level. The case studies have also underlined how the two levels of education are closely interlinked and interact, and are in turn intertwined with the future development of Africa in the increasingly globalizing knowledge economies. Hence these studies do provide an important platform for continued policy dialogue

and research to generate ideas and innovations geared towards shaping the development of a dynamic and interactive interface between secondary education and higher education. In this way, the expected massive expansion of secondary and higher education can be shaped and managed to effectively contribute to the challenges of socio-economic development and the renaissance of African societies.

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