

**THE EFFECTS OF MASSIFICATION ON HIGHER
EDUCATION IN AFRICA**

By

Goolam Mohamedbhai

February 2008

TABLE OF CONTENTS

	Page
FOREWORD	iv
ACKNOWLEDGEMENTS	v
EXECUTIVE SUMMARY	vi

PART I REVIEW OF MASSIFICATION OF HIGHER EDUCATION WITH SPECIAL REFERENCE TO AFRICA

CHAPTER 1: INTRODUCTION	2
1.1 Higher Education in Africa	2
1.2 Innovations in African Higher Education	3
1.3 Various Facets of Massification	4
 CHAPTER 2: MASSIFICATION OF HIGHER EDUCATION	 5
2.1 Massification: A Global Phenomenon	5
2.2 Massification in Africa	7
2.3 Effects of Massification	8
 CHAPTER 3: STRATEGIES FOR DEALING WITH MASSIFICATION	 13
3.1 Need for Innovative Strategies	13
3.2 Innovative Strategies around the World	13
3.3 Regional and National Innovative Strategies in Africa	18
3.4 Institutional Innovative Strategies in Africa	21

PART II EFFECTS OF MASSIFICATION ON SEVEN AFRICAN UNIVERSITIES

CHAPTER 4: BACKGROUND	26
4.1 Objectives, Scope and Methodology of Study	26
4.2 The Guidelines	26
4.3 Limitations and Constraints of the Study	27
4.4 National Higher Education Systems	27
4.5 The Seven Universities	29
 CHAPTER 5: EFFECTS OF MASSIFICATION ON THE INSTITUTIONS	 31
5.1 Increase in Student Enrolment	31

5.2 Staffing	33
5.3 Teaching and Learning	35
5.4 Student Performance and Graduate Employment	38
5.5 Physical Infrastructure	39
5.6 Students' Residences	40
5.7 Government Funding	41

CHAPTER 6: INNOVATIVE APPROACHES TO ADDRESS MASSIFICATION

6.1 Introduction	43
6.2 Approaches to Teaching Increased Numbers	43
6.3 Strategies for Increasing Enrolment	44
6.4 Income Generation	46
6.5 Physical Infrastructure	47
6.6 Use of ICT	49
6.7 Research	51
6.8 Staff Training	52
6.9 Institutional Management and Governance	53
6.10 Quality Assurance	54
6.11 Students' Quality of Life	55

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

7.1 Criteria for 'Institutional' Massification	59
7.2 Creating an Institutional Database	60
7.3 Planning for Massification at National Level	60
7.4 Planning for Massification at Institutional Level	61
7.5 Running of Parallel Programmes – a Panacea for University Funding?	62
7.6 Improving and Expanding Physical Infrastructure	64
7.7 Students' Residences – What Future Role for Universities?	64
7.8 Importance of Staffing and Imperative of Research	65
7.9 Use of ICT for Effectiveness and Efficiency	66
7.10 Concluding Note	68

BIBLIOGRAPHY

ANNEX 1: Composition of Institutional Report Teams in the Participating Universities

ANNEX 2: Guidelines for Preparing Institutional Reports

FOREWORD

ACKNOWLEDGEMENTS

I wish to express my sincere thanks to Mrs Alice Lamptey, Coordinator of the Working Group on Higher Education based at the Association of African Universities (AAU), who was ably assisted by Ms Annick Agbotame, Assistant Project Officer, for her guidance and support throughout the duration of this study. Thanks are also due to Prof. Olusola Oyewole, Project Officer at the AAU, for his very useful contribution, and to Prof. Akilagpa Sawyer, Secretary General, and Prof. John Ssebuwufu, Director of Research and Programmes at AAU, for their advice.

I am very grateful to Ms Sewoenam Gbordzi for having undertaken the bulk of the literature review on massification, which appears in the first part of the report.

I wish to thank the Institutional Report Coordinators and members of their team at the seven universities surveyed for their collaboration and efforts, in spite of many constraints. I am also grateful to the Vice-Chancellor/Rector, staff and students of the universities visited for their warm welcome at their institution and for sparing their precious time for showing me round and having discussions with me.

Dr N. V. Varghese, Head of Higher Education and Specialized Programs at the International Institute for Educational Planning, and Dr Paul Effah, Executive Secretary of the National Council for Tertiary Education of Ghana, kindly reviewed the initial draft of the report. Their insightful comments and valuable suggestions are gratefully acknowledged.

Finally, I would like to thank the Working Group on Higher Education (WGHE) of the Association for the Development of Education in Africa (ADEA) for commissioning the study, and the AAU, for having given me the opportunity to undertake this study.

Goolam Mohamedbhai
Mauritius
February 2008

EXECUTIVE SUMMARY

This study on the effects of massification on higher education in Africa is a follow-up to a study on higher education innovations in Sub-Saharan Africa undertaken by the WGHE in 2004. That study revealed that there were very few innovations reported by African higher education institutions on issues concerning optimal utilization of space, student accommodation, maintenance of physical facilities, etc., all of which relate directly to the massive increase of student enrolment, or massification. It was therefore decided to identify a few institutions to examine how they were addressing the challenges posed by massification in innovative ways, and share these experiences.

The report is in two parts. The first part is a literature review of massification on higher education with special reference to Africa. It shows that massification is a global phenomenon, resulting from factors such as democratisation of education, the advent of the knowledge economy and globalization. In Africa, massification of higher education has occurred mainly because of improvement at primary and secondary education levels, resulting in a large cohort of graduates seeking access to higher education, and also the realisation now that higher education is crucially important for economic development. In industrialised countries, massification is defined in terms of the gross higher education enrolment ratio of a country, a ratio approaching 50% being considered as 'mass' enrolment. On the other hand, in developing countries, including those in Africa, massification of higher education is characterised by a very rapid increase in student enrolment maintained over several years, although the enrolment ratio is very low. An examination of a few African countries shows that the average annual increase in student enrolment from 1999 to 2005 was in the range of 12% to 60%, yet the gross enrolment ratio rarely exceeded 5%.

Higher education institutions also inevitably experience a rapid increase in student enrolment, this being regarded as 'institutional' massification. Another characteristic of Africa is that massification in the institutions has occurred without an accompanying increase in resources – financial, physical and human – which has had a direct impact on the physical infrastructure, the quality of teaching and learning, research, quality of life of the students, etc.

A number of strategies have been adopted to cope with massification at national level. These include diversification of higher education institutions, setting up of private institutions, use of distance education and virtual learning, introduction of cost-sharing and student loan scheme in public universities, etc. At institutional level, the strategies include setting up of institutional quality assurance system, training of staff to deal with large cohorts of students, greater use of ICT in management and teaching, innovative approaches to generate more funds and improving the quality of life of the students.

The second part of the report describes the state of massification in seven selected African universities, namely:

1. The University of Cheikh Anta Diop, Dakar, Senegal
2. The University of Edouardo Mondlane, Maputo, Mozambique
3. The University of Ghana, Legon, Ghana
4. The University of Nairobi, Kenya
5. The University of Ouagadougou, Burkina Faso

6. Kenyatta University, Nairobi, Kenya

7. The National University of Science and Technology, Bulawayo, Zimbabwe

Each university was asked to prepare an Institutional Report in response to a set of Guidelines to describe how massification has affected them over the period 1986-2006 and what innovative approaches they have adopted to address the challenge.

An analysis of the Institutional Reports shows that the seven universities experienced an annual increase in student enrolment in the range 15-25%. Yet, mostly because of lack of funds, this has not been accompanied by a corresponding increase in teaching staff. The staff/student ratio in most of the institutions was of the order of 1:30 but with some departments having ratios of up to 1:100. This situation has resulted in an increased teaching load and administrative duties of the staff, affecting their contribution to research. It has also affected the quality of teaching, the large cohorts resulting in overcrowded lecture theatres and, in some cases, abandonment of tutorials and practicals. Library facilities have also been strained and most institutions are unable to provide sufficient numbers of computers for use by the students. But perhaps the greatest negative impact of massification has been on the physical infrastructure of the universities, including the students' residences. Very few additional buildings have been put up and most of the existing ones, inadequate for large numbers of students and not having been maintained, have greatly deteriorated.

The universities reported several innovative approaches to address massification. These include splitting of classes into smaller groups, employment of part-time staff for teaching, simultaneous transmission of lectures using video conferencing, use of appropriate ICT software for planning the use of lecture rooms and processing examination scripts, the introduction of training programmes for the staff to improve their teaching skills to cope with large cohorts of students, and the use of open and distance learning as well as e-learning. Kenyatta University, for example, has dramatically increased its student enrolment through open learning, having created Open Learning Centres in different parts of the country. It is also, through the African Virtual University, making good use of e-learning.

In order to generate their own funds to complement government funding, some institutions have undertaken activities such as consultancy, renting of their premises, running a bookshop and printing press, creating an alumni foundation or an endowment trust, and charging a very small amount fees from students as at the University of Ghana, University Cheikh Anta Diop and the National University of Science and Technology. But the one approach that has not only increased student enrolment but has also significantly improved the funding of the students, is the running of so-called parallel programmes, whereby a university runs separate programmes for which it charges full economic cost fees for those students who are unable to gain access to the institution by the normal admission process and criteria. These programmes are run in parallel to the institution's other programmes which are heavily subsidised by government grants. This takes place in an extensive way at the University of Nairobi and Kenyatta University and, to a lesser extent, at the University of Edouardo Mondlane and the National University of Science and Technology.

To address the problem of lack of physical infrastructure, a few universities have resorted to decentralise or delocalise their main campus, to extend existing buildings or put up new ones where possible and, in one or two cases, to rent premises for lectures. With regard to students' residences, the University of Ghana has taken the innovative step of allowing the development of private hostels on its land, and the University of Science and Technology has helped to encourage private proprietors to convert their blocks of flats into students' hostels. The lack of funds remains the major constraint for all the institutions to develop their physical

infrastructure. Therefore, the innovative approach used by Ghana to use 2.5% of its collected income from the Value Added Tax to create a fund for education, which can be used by higher education institutions for putting up buildings and purchasing equipment, is noteworthy and could be emulated by other countries.

The main conclusions and recommendations of this study are:

- It would be desirable to establish a threshold in terms of average, annual increase in student enrolment in a higher education institution in order to establish whether it is experiencing massification. At the same time, criteria should be laid down, based on the student carrying capacity of an institution, to establish whether massification is having a positive or negative impact on the institution.
- It is recommended that African higher education intuitions take urgent steps to create a comprehensive, computerised database of vital statistics about their institution to help them in decision- and policy-making.
- All the indicators show that the output from the secondary education sector in African countries will continue to increase, and the demand for access to higher education will accordingly continue to rise. Each African country should set up a high-level national body to plan and coordinate their higher education system to meet the challenge of massification. The considerations that should guide national planning should include: creating a higher education system with diversified institutions, responding to human resources requirements, funding, encouraging the setting up of quality-controlled private institutions and promoting quality assurance in public institutions.
- Planning for massification should equally take place at institutional level. Each higher education institution should set up a cell to plan and monitor the effects of massification and to advise management on appropriate short and long term measures. Institutions should also set up an internal quality assurance system and establish linkages with relevant stakeholders to ensure the relevance of their programmes. To improve success of students and reduce wastage, institutions should create pathways across programmes to facilitate movement from one programme to another, and facilitate the exit of non-performing students with a lower qualification.
- African governments will be unable to continue to fully fund public higher education institutions in view of budget constraints. Public institutions should be allowed to charge tuition fees to their students. However, these should not be full-cost recovery ones as government must continue to subsidise higher education as a public good, and the fees should be accompanied by appropriate loans and scholarships to protect disadvantaged students.
- The running of parallel programmes, with some students paying full economic fees and others being heavily subsidised, could have long term negative consequences on African public universities. In view of the success of this approach in generating funds and the financial difficulties African universities find themselves in, an in-depth study of a sample of institutions having introduced parallel programmes should be undertaken.
- There is a need for a major re-think of the future role and responsibility of African universities in the provision and management of students' residences. It does seem inevitable that students will eventually have to be the main contributors for their living expenses while studying.
- Every attempt must be made by higher education institutions to limit the teaching load of their staff to a reasonable level and to recruit permanent academic staff. The AAU could assist its member institutions in the recruitment of staff by advertising their vacancies. At the same time, African governments and institutions should ensure that

salaries and conditions of service of academic staff are adequate and that the campus environment is peaceful and conducive to teaching and learning.

- Research is crucial for Africa and African universities should be in the forefront in undertaking research. African governments should allocate funds to their universities specifically for research and also set up a research council to encourage, coordinate and fund research nationally.
- African universities should systematically keep a record of their research activities. Academic staff should be asked to submit, annually, their research involvement and output which can then be compiled in a computerised database.
- ICT can enhance the effectiveness and efficiency of many of the operations of higher education institutions and overcome some of the constraints posed by massification. African institutions must therefore devise institutional policies to encourage a greater use of ICT. Also, African governments must frame national policies to improve their ICT infrastructure. Human resource development in ICT should figure prominently in both institutional and national policies.

To conclude, for African governments and higher education institutions to convert the challenges of massification into opportunities and make the higher education sector a vibrant and productive one, they need to implement innovative strategies by actively involving all stakeholders. They can also learn from experiences of other countries, although they should be conscious of the fact that some solutions may not be appropriate to their local context.

PART I

REVIEW OF MASSIFICATION OF HIGHER EDUCATION

WITH SPECIAL REFERENCE TO AFRICA

CHAPTER 1: BACKGROUND

1.1 Higher Education in Africa

The terms higher education and tertiary education are often used interchangeably, as will be done in this report, to represent all forms of organized educational learning and training activities beyond the secondary level. These may be at universities, polytechnics, training colleges as well as in all forms of professional institutions, etc.

Ajayi et al (1996) trace higher education in Africa from Egypt in the last two or three centuries BC and AD with the Alexandria Museum and Library and the monastic system. These saw the development of Islamic and Arabic and, later, Christian influence on education. After many centuries of change and development, particularly due to the advent of missionaries and also due to colonial influence in Africa, the continent was exposed to the Western system of higher education. Indeed, most of the secondary schools, which led to the felt need for universities, were instituted by churches such as the Methodist, Anglican and Presbyterian churches.

The history of the modern African University, as it is now known, can be traced back to the period between 1930 and 1960, when the few African western-educated elite, who saw European education as a strong tool to fight against colonialism, demanded the creation of European systems of education in Africa (Assié-Lumumba, 2006), firmly believing that anything that was good for the Europeans was also good for the Africans. Most of the countries in Sub-Saharan Africa eventually had universities created but, in the majority of cases, it was after they had attained independence from their colonial masters. Most of these African universities were, however, modelled on specific institutions of the colonial powers and during the period spanning the beginning of the 20th century and the 1950s, all higher education programmes in Africa reflected the major trends in philosophical discourse and policy debate among the major western powers i.e. the colonial powers and the USA (Assié-Lumumba, 2006).

Obanya (2004) accentuates this point when he makes mention of the fact that universities in the colonies were simply campuses of specific universities in the colonizing country. Some examples of such institutions are Fourah Bay College in Sierra Leone, which was a college of the University of Durham; University of Ibadan, University of Ghana and Salisbury (now Harare) College in Rhodesia (now Zimbabwe), which were all “in special relationship”[sic] with the University of London. French campuses also had their colleges, among which were the Universities of Dakar, Yaoundé, Abidjan and Brazzaville (Obanya, 2004).

During the post-independence period of 1960s through 1980s, African higher education played an important role in providing high-level manpower in areas pertaining to social and economic development and in promoting research. Most of the universities received generous funding from the former colonizing powers and they established fruitful links with universities in the north.

During the 1990s, however, African higher education started to suffer from neglect. Because of the financial and political crises in many African countries, the universities could not be adequately financed to cater for the ever-increasing student enrolment. There was also a growing tendency to give priority to basic education. This was partly due to the fact that many international donors and funding agencies focused their attention on basic and

secondary education in developing countries to the detriment of higher education, on grounds that the economic returns from the former were far greater than the latter. The World Bank, for example, reduced the proportion of funds allocated to higher education from 17% between 1985 and 1989 to a mere 7% between 1995 and 1999 (Bloom *et al.*, 2005). The quality of higher education in Africa started to deteriorate rapidly.

Such an attitude towards higher education subsequently changed at the end of the 20th and beginning of the 21st centuries. Higher education is now recognized by all as playing a very important role in economic development. The World Bank (2002) affirms that tertiary education is essential for the facilitation of nation building and also for the promotion of greater social cohesion, inspiring confidence in social institutions, as well as encouraging democratic participation through open debate. Higher education also brings about an appreciation of diversity in gender, ethnicity, religion and social class. APEID-UNESCO (2006) reports that many individuals consider higher education as a major avenue for social mobility and a *carte blanche* for moving up the upper echelons of society. At the national level higher education is considered as a vital instrument for human capital development, sustaining economic growth, restructuring society and promoting national unity.

Also, most of the countries in Africa are still developing and therefore need the research in science and technology-based innovations which are vital to the growth of any economy. Countries that have invested in their scientific and technological capabilities (usually developed at universities) have been found to reap great results in industrial growth. Bloom *et al.* (2005) report that the expansion of tertiary education may promote faster technological catch-up in a country and also improve its ability to maximize its economic output. They state that Sub-Saharan Africa is currently operating at a production level that is about 23% below its possibility frontier and that an increase in the stock of tertiary education will definitely lead to an increased rate of technological catch-up.

The importance of higher education, especially for African countries, cannot therefore be overemphasized. Indeed, in its 1997 report on the state of Education in Africa, UNESCO (1997) describes higher education as being to the education system what the head is to the body. With democratization as the new watchword and with UNESCO (1999) emphasising that “access to higher education must be equitable for all citizens based on the principle of merit and regardless of gender, religion, ethnic or socio-economic background”, most African countries started making great efforts to widen access to higher education and to reform their higher education system.

1.2 Innovations in African Higher Education

In 2004, the Association of African Universities (AAU) published the findings of a study on higher education innovations in Sub-Saharan Africa (WGHE, 2004). The study, commissioned by the Working Group on Higher Education of the Association for the Development of Education in Africa, surveyed 53 higher education institutions in different sub-regions of Africa that were undertaking reforms, in order to understand the type and nature of the reforms and to document them. Seven areas of innovations were considered, namely: strategic vision and mission; financing; access/equity; governance; quality/curriculum; staff development and retention; relevance in teaching, research and service; and student life. Also, four main drivers of innovation in African higher education were identified: increasing enrolment; globalization; financial constraints; and internationalization.

In all, 453 innovations were reported by the higher education institutions in the identified areas. The report on the study, however, lists certain types of innovations which were missing or which were rarely reported. These included:

- maintenance of physical facilities;
- optimal utilization of space;
- student affairs;
- student accommodation;
- HIV/AIDS; and
- institutional statistics.

All the above areas are a direct consequence of the massive increase in student numbers in the higher education institutions, or what has been termed as ‘massification’ of higher education by Altbach (1982).

This is what prompted this study on the massification of higher education in Africa.

1.3 Various Facets of Massification

Massification has been defined as the mass adaptation of a phenomenon by the suppression of its distinguishing features. Scott (1995) used the term massification in the context of higher education systems to describe the rapid increase in student enrolment in the latter part of the twentieth century. Trow (2000) provided a typology to the term massification and coined the terms elite, mass and universal higher education, with elite representing a national enrolment ratio of up to 15%, mass representing a ratio of up to 50%, and universal a ratio in excess of 50%.

While the use of national enrolment ratios or participation rates may be appropriate to define massification of higher education in industrialised countries, this may not necessarily be the case for developing countries. Thus, most African countries have a very low higher education enrolment ratio but they have experienced a very rapid increase in actual numbers of students enrolled in higher education; that, too, should be considered as massification.

In order to accommodate the large numbers of students wishing to access higher education in a country, the higher education institutions in that country also experience huge increases in student enrolment. That can be considered as ‘institutional’ massification, although there is hardly any definition of institutional massification in higher education literature.

An important characteristic of the majority of African higher education institutions is that they have experienced institutional massification but with no adequate planning and with no proportionate, accompanying increase in resources (human, financial, physical) to enable them to cope with the situation.

CHAPTER 2: MASSIFICATION OF HIGHER EDUCATION

2.1 Massification: A Global Phenomenon

Tertiary education in the developed world started around the 12th Century AD and continued to grow steadily and at a more or less even pace until the period spanning the Second World War. This trend changed, however, when the baby boomer generation after World War II created a large demand for higher education that had hitherto been unprecedented. Enrolment was higher than anticipated in most developed countries.

As far back as 1963, the British Committee on Higher Education (1963) reported large numbers of students in higher education, especially in France and some other countries of Western Europe, due to their seemingly automatic system of admission (i.e. once a candidate has obtained the Baccalauréat or the Abitur). Britain and the Soviet Union, on the other hand, had a high degree of selection, with many institutions having their own stringent entrance examinations. The United States, as an exception, was reported as showing features of both the continental and British systems. In that country, there was, and still is, stiff competition for entry into the institutions of national repute, but some universities also admit any high school graduate.

Irrespective of the national educational system, all these countries experienced some increases in enrolment. However, this was just the tip of the iceberg. The latter part of the twentieth century saw the democratization of higher education and a shift from the elitist to mass higher education. In fact, in industrialised countries, the massive increase in student enrolment had the most far-reaching effect on higher education after World War II (WGHE, 2004). Altbach (1982) described massification as “the most critical contemporary force pressing on universities”. Bennich-Björkman (1997) referred to it as a modern-day “revolution” in higher education.

The Economist (2005) reports that the proportion of adults with higher educational qualifications in OECD countries almost doubled between 1975 and 2000 (22% to 41%). However, most of the rich countries are still struggling to digest this huge growth in numbers. *The Economist* continues by stating that this growth has spread to the developing world and China, for example, doubled its student population in the late 1990s whilst India tags closely behind China. Mega institutions such as the University of Rome, the National University of Mexico and Turkey’s Andalou University, have student populations as large as 180,000, over 200,000 and 530,000, respectively.

This expansion in numbers now seems to be a global phenomenon, as illustrated in Table 2.1 which shows the increase in tertiary enrolment ratios in different regions of the world over the period 1991-2005. In 2005, according to Trow’s typology, countries in North America and Western Europe had reached almost universal higher education while those in Central and Eastern Europe had mass higher education. Some countries in East Asia and the Pacific, for example Australia and Singapore, have also reached mass or even universal higher education. However, it is important to note that, for Sub-Saharan Africa, not only has the increase in the enrolment ratio been insignificant from 1991 to 2005 but the ratio is also by far the lowest than any other region of the world.

Table 2.1: Gross Tertiary Enrolment Ratios in Different World Regions (1991-2005)

Region	Gross Tertiary Enrolment Ratio (%)			
	1991	1999	2002	2005
Arab States	...	19	20	22
Central & East Europe	32	39	50	57
Central Asia	29	19	23	26
East Asia & the Pacific	...	14	19	24
Latin America & the Caribbean	...	21	26	30
North America & Western Europe	51	61	67	70
South & West Asia	...	...	9	10
Sub-Saharan Africa	...	4	5	5

Source: UIS(2007) ... No data available

UNESCO (2003) reports that many countries with higher education systems that are at critical development phases have experienced higher rates of expansion and increase in student enrolment than anticipated. Of these countries, Kazakhstan experienced an increase in student enrolment from 272,700 to 442,400 (62%) between 1995 and 2001, and Bangladesh from 801,733 to 962,567 (20%) between 1998 and 2001. Other countries with well-developed higher education systems also experienced significant increases. The Republic of Korea, for example, recorded increases from 2,950,826 to 3,500,560 (19%) between 1998 and 2001, and Australia from 671,253 to 726,418 (8%) within the same period.

There is now an even greater demand for tertiary education from those who have completed their secondary education. New, non-traditional learners have also appeared on the scene; these are “mature” students i.e. those who are 30 years and over, who either had missed the opportunity of benefiting from higher education, or who want to improve on their qualifications, or who desire a career change. Lifelong learning is now a common trend worldwide. This mass demand for higher education is creating great pressure for systems and institutions which are required to provide higher education of quality and relevance to the many students who are seeking to better their lot in life through higher education. According to *The Economist's* (2005) survey of higher education, traditional institutions are undergoing major changes which are affecting them at the very core. This is due to four main reasons:

- the democratization of education which poses a threat to the traditional position of universities as institutions of higher education for the elite;
- the rise of the knowledge economy which is also putting pressure on traditional learning methods and course offerings in universities;
- the phenomenon of globalization which is turning higher education into an export industry; and
- competition, as traditional institutions have to compete for students, funds and research grants.

The democratization of higher education seems to be the most prominent issue in higher education in our decade and the current trend seems to be a global mass demand and mass intake into higher education institutions. However, whilst some countries seem ready for this mass demand, others appear not to have planned for this phenomenon. China is one of the few countries that made the decision to increase university student enrolments with the goal of stimulating the country's economy (Yang, 2002). In other countries where the demand for

higher education seems to be greater than the state's preparedness to deal with it, mass enrolment has profoundly affected higher education.

Globally, massification has numerous consequences for higher education systems, not just in terms of the increase in student numbers but the accompanying changes in the composition, character and aspirations of the student population (Gibbons, 1998) as well as of staff (Bennich-Björkman, 1997), the variety of institutions, the range and diversity of course offerings, the demands for reform, changes in governance structures and funding mechanisms, the demand for greater accountability, and above all, the demand for relevance and responsiveness to the beneficiary and to societal needs (Ekong & Cloete, 1997).

2.2 Massification in Africa

Africa began to experience increased demand for higher education in the late 1970s and early 1980s. This demand was due in part to the rising population in African countries. With economic and health situations greatly improving on the continent, there was a lower mortality rate, resulting in greater numbers of pupils enrolling in basic schools and continuing to secondary schools.

The increasing enrolment in basic education in response to the Education for All campaign, and free and compulsory basic education offered by most African states, have led to marked increases in both primary and secondary enrolment and completion rates. For example, secondary enrolment increased by about 43% from 1999-2004, with about 31 million students enrolled across the African region (UNESCO, 2007). These secondary graduates, in turn, sought admission into the tertiary education sector. However, this increase in demand was more than the institutions could cater for and, by the late 1980s, African higher education was reported to be in crisis (Ajayi *et al*, 1996). This is because although the higher education sector was fast expanding and developing, most of the countries on the continent were not stable enough to cater for the rapid increase in enrolment. According to Obanya (2004), "studies have linked the crisis to the political and socio-economic contortions that Africa has gone through in the past two decades". With the continent being racked on every side by armed conflicts, civil wars, economic repressions and poor governance (due to either dictatorial or corrupt leadership), it was extremely difficult for the continent to find its feet in the fast-developing sector of higher education.

Although all African countries generally experienced increases in tertiary student enrolment, UNESCO (2003) reports that French-speaking countries experienced faster rates due to their admission policies. In the Francophone system, students obtain "easy access" to higher education as any holder of a Baccalauréat (equivalent to the British Advance Level certificate) is entitled to be enrolled in a university.

The situation seems to be less serious in the Anglophone countries where enrolment is usually subject to a rigorous selection process and access is more or less restricted. In Kenya, for example, less than 10 % of the senior secondary graduates are admitted each year to the six public universities of the country. Nevertheless, the number of students admitted each year continues to increase in spite of the rigorous selection process.

Ghana, an Anglophone country, is another example of this phenomenon. Adu & Orivel (2006) report that enrolments in higher education institutions in the country increased rapidly from 1990 to 2004 at an average rate of 18% per year. The current rate of enrolment implies

that the country would have one million students by the year 2020 – a level close to what pertains in OECD countries. However, it is unlikely that Ghana’s economy would have developed sufficiently by then, given the current 5% GDP growth rate. Adu & Orivel (2006) conclude that “this rapid increase is unsustainable in the long run”.

The same trend of a rapidly growing demand for tertiary education is seen in most African countries, even over the past decade. Table 2.2 shows the total tertiary enrolment in 1999 and 2005 for those countries for which data were available (UIS, 2007). Except for South Africa and Swaziland, the average annual increase in enrolment is extremely high. There is no doubt that these countries have experienced massification of their higher education. Yet, the gross tertiary enrolment ratio for most African countries (with the exception of a few such as Mauritius, Nigeria and South Africa) is very low, barely exceeding 5% in 2005. The large numbers of students have been accommodated not only in existing institutions but also in a variety of newly-created ones, both public and private, including vocational and professional institutions, causing the quality of education to decline in many countries, as resources are stretched increasingly thin (Mwiria & Ng’ethe, 2002).

Table 2.2: Increase in Enrolment in Tertiary Education in African Countries

Country	Tertiary Enrolment		Percentage Increase	
	1999	2005	1999-2005	Annual Average
Burkina Faso	9,878	27,942	182%	30%
Burundi	5,037	16,889	235%	39%
Ethiopia	52,305	191,212	265%	44%
Kenya*	47,254	93,341	98%	16%
Lesotho	4,046	7,918	96%	16%
Mali	18,663	32,609	75%	12%
Mauritius	7,559	16,852	122%	20%
Rwanda	5,678	26,378	365%	61%
Senegal	29,303	59,127	102%	17%
South Africa	632,911	735,073	16%	3%
Swaziland	4,880	5,897	21%	3%
Tanzania	18,867	51,080	171%	28%

Source: UIS, 2007 *Based on figures from University of Nairobi’s Institutional Report

The pressure for getting access to higher education institutions continues to increase as more and more students enrol in and qualify from secondary education (SEIA, 2008). Effah (2005) reports that between 1996 and 2004, only about 25-40% of applicants to higher education in Africa were admitted. Indeed, Assié-Lumumba (2006) affirms that: “While higher education enrolment in Africa is lower than in other regions of the world, this sub-sector has been growing disproportionately faster than the national economies, including the offer of jobs in the labour market and other supportive infrastructure and institutions.”

Most African governments and institutions seem ill-prepared and ill-equipped to cope with the growing demand for higher education. This has led them to experience countless challenges in trying to cope with the massification phenomenon. Massification in Africa seems to confirm the claim that “more means worse” due to the innumerable challenges faced by higher education institutions on the continent (Lomas, 2001).

2.3. Effects of Massification

Democratization and Capital Formation

According to UNESCO (1999), significant increases in enrolment are a positive sign of democratization of access. Access to higher education is not only open to those with the classic definition of student i.e. a person of 18-24 years who has entered higher education directly from secondary school or soon thereafter, but is also available to older students who wish to further their education in this era of “lifelong learning”. There are many more students of all ages, social class and calibre. Massification is therefore seen in a positive light because it is a proof of the democratization of access and is no longer elitist.

It also leads to greater human capital formation, providing countries with expert human resources needed for development. On a global level, massification seems to be important in this knowledge economy where the two classical pillars of a successful university have been changed to four and are no longer limited to quality teaching and research, but also the ability to innovate and to share knowledge. Creativity has also become very important due to the mass access and demand for higher education. Institutions are becoming more creative and competitive in their bid to attract the best students who usually have a wide variety of institutions and programmes to choose from.

Africa actually stands to gain from the democratization of access to higher education because one of the greatest needs of the continent is skilled and resourceful human capital to propel it from its current state of almost abject poverty to a respectable one.

Institutional Management and Governance

One major challenge being faced by African higher education institutions is the undue interference from states and governments as to how the institutions should be run. In many countries, there are rigid governance models and management practices which prevent institutions from embracing change and innovation and launching reforms to deal with the problem of massification. In dictatorial states, in particular, governments often select people who do not necessarily have the managerial competence or know-how for the effective running of higher education institutions into management positions of such institutions,.

Funding

Most African higher education institutions rely greatly on the state for funding as well as for policy-making as far as the public sector is concerned. However, most states do not apportion a sufficient amount of their financial resources to the education sector. From the little provision that is made for education, the greater portion is assigned to basic and secondary education. *The Economist* (2005) sums up this particular challenge to higher education institutions by stating that: “If more and more governments are embracing massification, few of them are willing to draw the appropriate conclusion from their enthusiasm: that they should either provide the requisite funds (as the Scandinavian countries do) or allow universities to charge realistic fees. Many governments have tried to square the circle through tighter management, but management cannot make up for lack of resources.”

According to Ajayi *et al.* (1996), “...funds available to run higher education institutions in Africa are grossly inadequate, making them subsist on a ‘starvation diet’.” They insist that the contraction of resources to the universities, coupled with an increase in demand, constitutes the most critical problem and greatest challenge of Africa’s higher education. Indeed, the unavailability of enough financial resources has led to the inability to sustain

growth of enrolment and improve quality and, according to Obanya (2004), massification has compounded the problem of funding in higher education.

Many governments agree, in principle, that there must be democratization and increased access. However, they usually do not have enough resources to support the higher education sector in this regard. UNESCO (2007) reports that many countries in the African region are making efforts to increase government expenditure on education in general. Despite this upward trend, the share of national income spent on education in most countries is still below 5% in the majority of countries where data are available. Many countries, where student fees are charged, are trying to facilitate access to higher education by granting loans to students. However, although more than 60 countries have student loan programs, access to affordable loans frequently remains restricted to a minority of students. Moreover, such loans are not necessarily available to those students with limited resources who have a greater need for financial aid (World Bank, 2002).

Quality

The challenge for most policymakers is the creation of a higher education system that combines mass access with quality. In countries where student fees are charged, more and more institutions, in their bid to raise funds, have resorted to admitting less qualified students. The increase in numbers has definitely diminished the elitist nature of higher education institutions, but has also had an effect on quality. Lomas (2001) reports that, in the United Kingdom for example, many students were admitted without the usual minimum standard requirement of two GCE Advance Level subjects for undergraduate courses. Indeed, Rust (1997) gives the example of Liverpool John Moores University where the proportion of non-standard entrants was nearly 75%. This has led generally to falling expectations and standards in universities.

When it comes to Africa, the challenge of balancing the seemingly mutually exclusive demands of greater access and maintaining quality seems much more acute due to a lack of resources. Obanya (2004) reports that “the massification of higher education that resulted from throwing the gates more widely open and the specific challenges, were those of ensuring quality and ensuring the judicious use of resources, the size of which have not matched the rate of increase in student numbers.” Many of the stakeholders of higher education in Africa are bemoaning the fact that the higher education systems in Africa are collapsing. Because of the increasing demand for higher education, many private institutions are springing up but most of them are not accredited by any governing body and are of dubious quality.

Relevance

Due to the call for a diversification of mass higher education, more and more courses have been introduced in both public and private tertiary institutions. However, some of these courses do not take the needs of the labour market into account. Mass higher education has therefore been criticized as having led to the devaluation of higher education by providing a “plethora of quasi-academic courses” including degrees in media studies, knitwear, beauty therapy, and golf course management, which have absolutely no seeming relevance to development on a global scale (Lomas, 2001).

In Africa, many more students graduate in courses that are not relevant to the needs of their society and therefore end up joining the thousands of unsuccessful job applicants who do not understand why they have a degree but cannot get employment. UNESCO (1997) reports that “African societies are leaving greater and greater portions of their higher education graduates unemployed...” This is not only due to the large numbers of graduates being churned out but

also largely attributable to the deficit in the quality and relevance of higher education. One factor causing unemployment of graduates is the fact that larger numbers of students are enrolled in the humanities where there are fewer job prospects, whereas there are fewer graduates in the science and technology sector, for which there is a greater need.

Assié-Lumumba (2006) goes further to say that even though education enrolment in Africa is lower than in other regions of the world, this sub-sector has been growing disproportionately faster than the national economies, including the availability of employment in the labour market and other supportive infrastructure and institutions. Obanya (2004) describes this situation as “education for the world of no work”. This opinion is seconded by Adu & Orivel (2006), who assert that the rapid increase in tertiary enrolments is not necessarily based on the needs of the employment sector, and this point is equally shared by Effah (2005).

Teaching, Learning and Research

Massification has serious effects on teaching and learning. The situation in Africa is particularly grave. The increased enrolment does not match up to the available academic facilities. Lecture rooms, laboratories and materials are insufficient or unavailable. There is usually a marked increase in the student/teacher ratio leading to a lack of individual attention to students or to handling of students in smaller groups. Lecturers resort to lecture and examination methods which favour rote learning. According to a UNESCO report on the state of education in Africa, (UNESCO, 1997), teaching methods are not adapted to the overcrowded classes. In addition to this, the supervision and follow up of the students, just like the modes of assessment of learning, produce little success in university examinations. Some universities record as high as 70% failure rates of first and second year students.

Barret (198) sums up the situation being faced by many higher education institutions as follows: “Clearly the nature of higher education has changed with, for example, less dependence on the relationship between lecturer and student as large scale lectures, the internet, email, distance learning materials become used to a far greater extent to communicate knowledge. A smaller proportion of students now live on campus leading to the university becoming less of an academic community than it was in the 1960s and the 1970s.”

Most lecturers, faced with large numbers of students, coupled with declining academic salaries, get demotivated and discouraged. They have to spend much time in marking scripts and organizing regular assessment and as a result they do not have time to devote to research. Africa is currently experiencing low levels of participation in research as well as low research output. Evidence available from the UNESCO Institute of Statistics suggests that while worldwide publication of scientific articles increased by 40% between 1988 and 2001, the number of published articles in Africa during the same period fell by 12%.

Infrastructure

Overcrowding of lecture rooms, laboratories, students’ residences and libraries results in deterioration of the physical infrastructure and wearing out of equipment (*The Economist*, 2005; Chevaillier, 2000; Adu & Orivel 2006).

Indeed, Ajayi *et al.* (1996) confirm that “many of the older universities were planned when much smaller numbers of students and staff were envisaged.” Effah (2005) gives the example of Ghana where “a university built for 3,000 students is currently coping with about 24,000 without corresponding expansion in academic and physical facilities, overstretching existing facilities to their elastic limits.” Obanya (2004) reiterates this point by giving the example of

the University of Yaoundé, Cameroun, which in 1993/1994 had over 40,000 students on a campus originally intended for 5,000 students.

Quality of Student Life

Students are perhaps the main victims of massification. They have to contend with overcrowded classrooms, unavailability or insufficiency of academic facilities including accommodation, reading materials, research equipment, computers etc. Academic life becomes very stressful since students have to cope with a myriad of challenges (*The Economist*, 2005; Chevaillier, 2000). These frustrations usually lead to students becoming more ungovernable and usually taking to the streets in demonstrations against either the management of the university or the government in order to improve their lot. Students usually complete higher education without having gained the necessary skills to make them employable. They spend most of their time just trying to survive and pass their exams and therefore do not have much time for self-development.

CHAPTER 3: STRATEGIES FOR DEALING WITH MASSIFICATION

3.1 Need for Innovative Strategies

In the light of the changing face of higher education and especially the role of the University, there has been the need for reform and change through innovative strategies. Guri-Rosenblit & Sebkova (2004) believe that “to offer diversified study opportunities to such big and heterogeneous groups of students, composed not only of fresh secondary-school graduates, but also of older applicants of different talents and capacities, ambitions and expectations, has been considered in the last decade as an urgent need in all central and eastern European countries.” UNESCO (2003) in their Regional Report on higher education in Asia and the Pacific asserts that “universities have tremendous capacity to innovate and help determine the future of their societies as well as their own societies.” That is probably the reason why the stakeholders in higher education are advocating for proactive rather than reactive higher education. Being proactive involves the introduction of innovative strategies in the organization and management of higher education institutions.

There is no doubt that higher education institutions need to be innovative in dealing with the challenge of massification if they are to adequately meet the needs of 21st century students. What are these innovative strategies and how are they being appropriated by higher education institutions and their stakeholders? The World Bank (2002) has made certain submissions as regards dealing with the challenges facing higher education. These include the encouragement of institutional differentiation, the diversification of funding sources, increased management autonomy for public institutions with regards to policy implementation, and a redefinition of government’s role as far as higher education is concerned.

3.2 Innovative Strategies Around the World

According to the World Bank (2002), certain countries have set out to transform their tertiary education systems by changing financing and governance patterns, creating evaluation and accreditation mechanisms, reforming curricula and introducing technological innovation, among others. However, these changes are uneven with a wide gap between the western and developing countries.

A noteworthy example is Australia, which started experiencing massification in 1989 when there were about 441,000 students. In 1998, that number had increased by 52% to 672,000 and it was clear that government funding alone would never be sufficient. Australia, therefore, introduced the Higher Education Contribution Scheme (HECS), an income-contingent liability scheme whereby higher education students have access to loans to pay their fees. They are then required to make deferred repayments of their loans through taxation once their salary exceeds a specified threshold. HECS has had a dramatic effect on funding of higher education in Australia. In 1987, government contribution to higher education was 84% and student contribution 2%; in 1998, the respective contributions were 58% and 28% (Dobson, 2001).

There has also been a diversification of the tertiary education sector over the past two decades with the introduction, alongside the traditional universities, of:

- technical institutes and community colleges running short-duration programmes;

- distance education centres; and
- open and virtual universities.

Many states have equally encouraged the creation of private higher education to meet the pressing need that seems to have overwhelmed public higher education (Chevaillier, 2000). This sector has helped by developing a narrow range of profitable programmes in popular fields such as business or services, thus easing the pressure on traditional higher education institutions and allowing the latter to concentrate on the more research-based courses.

Obanya (2004) also makes mention of the following innovative strategies to deal with massification or the liberalization of access in certain countries:

- In Western European countries such as France, Italy, Spain and Portugal, reforms to ensure that the expansion of higher education was accompanied by “greater devolution of responsibilities” to decentralized educational authorities such as the ‘Academies’ in France.
- Countries in South-East Asia expanded their national systems in phases, with heavy reliance on “corporate partnerships.”
- Cuba took the challenge in stride by building everything into its communist style ‘command’ economy.

The past couple of decades has seen the emergence of new approaches to higher education such as borderless education (distance and virtual universities, franchise institutions), corporate universities, etc. (World Bank, 2002), all aiming to meet the increasing demand for tertiary education.

Oslen (2000) reports that “an estimate made in early 2000 suggested that there were already more than 3,000 specialized institutions dedicated to online training in the United States alone.” In addition to this, thirty-three US states were reported to have a state-wide virtual university and 85% of all community colleges were expected to offer online distance education courses by 2002. Other existing virtual universities include the Virtual University of Monterrey, Mexico, and University Tun Abdul Razak (Malaysia). As of 2002, there were 15 virtual universities in Korea offering 66 BA programmes to about 14,550 students (World Bank, 2002).

Another innovative approach to deal with the increase in student populations is through franchise universities which exist predominantly in South and South-East Asia and which offer “validated” courses on behalf of British, US and Australian universities. The World Bank (2002) reports that of the 80,000 students enrolled in Australian universities, one-fifth are studying on offshore campuses, mainly in Malaysia and Singapore. These institutions cost about two-thirds or three-fourths less than what it would cost to enrol in the “mother institution”.

Also, on the list of alternatives to traditional higher education institutions are the corporate universities which, as at the year 2002, were about 1,600 in number, including Toyota, Disney and Motorola, the latter being considered as one of the most successful ones.

In the sections that follow, we look at the massification situation in a few specific countries and regions.

The United States of America

The Economist (2005) presents the United States of America as a model for organizing higher education. According to the article, “that country has almost a monopoly on the world’s best universities but also provides access to higher education for the bulk of those who deserve it”. Indeed, by 1999, 25% of the American population over 25 years old had completed four or more years of college, and roughly 8% held a Master's or higher degree. The number of women students and faculty members also increased perceptibly, as did the number of members of minority racial and ethnic groups and students with foreign citizenship. As can be seen from Fig. 3.1, there was an even greater improvement by 2005 when at least 83% of tertiary age citizens were enrolled in tertiary education (UIS, 2007). The United States has actually moved from the state of mass enrolment, as defined by Trow (2000), and is actually experiencing universal enrolment.

Table 3.1: Gross Enrolment Ratios in Tertiary Education in USA (1991-2005)

Gender	Gross Enrolment Ratios (%)				
	1991	1999	2002	2005	2005 Regional Average
Male & Female	74	73	81	83	70
Male	66	63	69	69	60
Female	82	83	93	97	80

Source: UIS(2007)

The success of American higher education “is not just a result of money; it is the result of organization” (*The Economist*, 2005). America seems to have learnt how to diversify its sources of income (fee-paying students, alumni, businessmen, philanthropists, etc.) and does not have to rely too much on state funding. Such non-reliance has also given the American higher education institutions more freedom to operate and allow variety to flourish. As at 2005, only 15.3% of government spending went to the educational sector, covering basic, secondary and tertiary education (UIS, 2007). The state funding to higher education is probably of the order of 5% but as other sources for funding have been developed, it has been possible to provide higher education to the majority of the population of tertiary age.

Guri-Rosenblit & Sebkova (2004) report that “the American higher education system is considered to be a most flexible one. Graduates of two year community colleges in the US, for instance, can enter a third year at UC Berkeley under certain circumstances.” The United States has also expanded its two year community college system and greatly encouraged private higher education. This has eased pressure on the public institutions (Obanya, 2004).

European countries, taking a cue from the successful higher education development in the United States, are establishing more flexible patterns of higher education under the Bologna Process, although they have to deal with the problem of language.

China

China is another country that has deliberately opted for an increase in the number of students enrolled in its universities and has included this in a series of its 5-year policies. Expansion of public higher education has witnessed a doubling of student enrolment from 6.4 million in 1998 to 15.1 million in 2002. According to Yang (2002), there has been a rapid expansion of

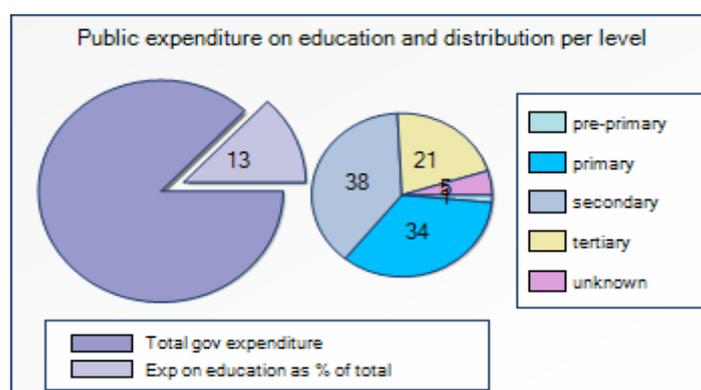
Chinese higher education in the past ten years, with the gross enrolment rate increasing from 3.4% in 1990 to 7.2% in 1995, and to 11% in 2000. As shown in Table 3.2, in 2005, 20% of the population of tertiary age in China was enrolled in higher education institutions (UIS, 2007). Quantitative growth has continued, with more than 1,500 new undergraduate and associate degree programmes having been launched in 2001.

The Economist (2005) also makes mention of China, together with India, as the countries which are making inroads in the experiment with massification. The Wikipedia (2006) reports that there has been an increase in the number of higher education institutions in China, from slightly over 2,000 in 2002 to about 4,000 in 2005. Total enrolment in 2002 was 11,256,800, of which number close to 40% were new recruits. Indeed, student enrolment increased to 15 million, with rapid growth which is expected to peak in 2008. China, through its reforms, has allowed higher education institutions more autonomy in income generation, while the state contributed about 21% of its education budget to tertiary education (see Fig. 3.1). By 1992, Chinese higher education institutions were by themselves generating 14% of their needed revenue, as opposed to 4% in 1978. They run short-term courses for employees, engage in research and consultancy (about 1.3% of their revenue in 1992), etc. (*The Economist*, 2005).

Table 3.2: Gross Tertiary Enrolment Ratios in China (1991-2005)

Gender	Gross Enrolment Ratios (%)				
	1991	1999	2002	2005	2005 Regional Average
Male & Female	3	6	13	20	24
Male	4	...	...	21	25
Female	2	...	...	18	23

Source: UIS(2007) ... No data available



Source: UIS(2007)

Fig. 3.1: Public Expenditure on Education in China in 2005

The Economist (2005) also reports that China has been very ingenious at curbing brain drain by trying to recreate the best western universities at home in order to compete with more sophisticated industrial economies. By getting faculty staff with foreign PhDs and getting involved in joint ventures with foreign universities, it is importing the very best of western

education to help maintain standards of quality. It goes further to say that: “The Chinese have no qualms about using market mechanisms to achieve this technology transfer. Tuition charges now make up 26% of the earnings of public universities, nearly twice the level in 1998; many professors are paid according to the number of students they attract; and China is creating a parallel system of private universities alongside the public ones.”

The University of Peking, for example, receives more applications than it has places. It has therefore created a parallel university that charges higher fees and accepts slightly less able students. China has also seen the need for concentrating on relevance by emphasizing subjects in science and technology over the humanities, thus forging strong links with industry. Indeed, the majority of doctorates earned in China between 1992 and 2003 were in practical subjects, which attract the brightest students: engineering (38% of the total), natural sciences (22%) and medicine (15%) (*The Economist*, 2005).

Asia and the Pacific

Countries in South-East Asia are also making inroads as far as dealing with the challenge of massification is concerned. APEID-UNESCO (2003) reveals that many countries of this region (including Malaysia, Thailand and Vietnam), import trans-national education, especially from the United Kingdom. This demand for UK-sourced education has been growing steadily and is expected to continue growing rapidly over the next fifteen years.

South-East Asian countries have also resorted to alternative sources of funding apart from relying on governments. Among the measures taken include the privatization of higher education, corporatization in public universities, implementation of student fees and the formation of strategic partnerships between the public and private sectors in the provision of higher education. Indeed, these universities now aim at marketing their teaching, research and other knowledge-based services, setting up commercial enterprises of their own or joint ventures with the business sector and maximizing the commercial value of their physical assets (APEID-UNESCO, 2003).

A study of higher education in 8 countries in South-East Asia, comprising Cambodia, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore and Vietnam, revealed that all the countries experienced “greater participation in higher education and ...increasing numbers of students in higher education.” This demand for higher education, brought about by population growth, has further escalated by the democratization of secondary education and the growing affluence of many countries in the region.

Japan should not be left out of the countries that are making a headway as far as innovation in higher education institutions is concerned. This is a country that is able to import ideas and practices from other countries and societies and apply them to work to its advantage by blending them into its own systems. For example, the nation borrowed heavily from China in order to firm up the foundation and construction of its modern education system. Japan also relied on different educational policies, practices, and philosophies from the West (Assié-Lumumba, 2006).

Private higher education institutions in the Philippines and in Indonesia far outnumber public providers. They have actually been absorbing the growing demands and expectations of higher education from society. According to a World Bank report (World Bank, 2006), the phenomenon of private higher education institutions is, however, a relatively recent development in Malaysia, Singapore, Cambodia and Vietnam. The report further states that

South-East Asian countries such as Malaysia, Thailand and Cambodia have also gone further by setting up appropriate legal mechanisms to regulate the provision of private higher education in their countries and ensure quality. These quality assurance mechanisms are not only for private institutions but also for public ones, and countries such as Lao PDR which have not yet set up their quality assurance mechanisms are in the process of doing so.

Indeed, the countries of South-East Asia seem to be setting precedence for other developing countries and countries in transition to follow. One of the ways of reforming higher education is by institutional restructuring. South-East Asian countries are reorganising their institutions to allow for greater autonomy in return for greater accountability. The institutional reforms being considered include more decentralized management; becoming more entrepreneurial and autonomous to keep up with competition; and involvement in self-evaluation and assessment for greater performance (World Bank, 2002).

3.3 Regional and National Innovative Strategies in Africa

As mentioned earlier, in the study on innovations in higher education in Africa (WGHE, 2004), massification was identified as one of the main drivers of innovation. A number of initiatives have been taken at the regional, sub-regional and national levels and these are outlined below.

Higher Education Revitalization Strategies

A number of strategies have been initiated to revitalise African higher education to enable it to meet the challenges of massification, a few of which are mentioned below. One of the factors that must, however, be considered in revitalizing African higher education is that “different societies require different models of higher education” (UNESCO, 1999).

The African Union has acknowledged the key role played by higher education in the continent’s development and in its Plan of Action for the Second Decade of Education for Africa (2006-2015), higher education figures prominently. One of the goals of the African Union is to completely revitalize higher education in Africa because of its firm belief that “higher education has the potential of providing African-led solutions to African problems in the spirit of Africa’s collective vision” (AU, 2006). The African Union has already launched a number of initiatives to achieve its goal.

The AAU, at its General Conference in 2005, launched a four-year Core Programme requiring an estimated US\$20 million to cover many of the pressing problems facing African higher education (AAU, 2005). The AAU is also managing the Mobilisation for Regional Capacity Initiative programme, covering the period 2006-2010 and funded by a US\$7 million grant by the Department for International Development of the UK, for the renewal and strengthening of African higher education (AAU, 2006).

At the sub-regional level, the West African Economic and Monetary Union has launched a five year project (2006-2011), to be funded by the African Development Fund, to revitalize the higher education institutions in its eight West African Francophone member countries (ADF, 2006). In the Southern African sub-region, the Southern African Regional Universities Association (SARUA), having as members the public universities in the 14 countries of the Southern African Development Community (SADC) region, has received start-up funding from the Dutch government to implement its Strategic Plan for the period 2007-2012 to assist its members (IEASA, 2007).

Private Institutions

The mass demand for higher education, and the inability of the state to cope with it, has led to the emergence of the private sector in higher education. A number of African countries initiated policies in the 1990s to encourage the setting up of private higher education institutions, Kenya being among the first to do so. It was followed by Senegal, Cameroon, Mozambique, Zimbabwe, etc. Initially most of the private African higher education institutions were set up by religious organizations, mostly Christian and Muslim (Varghese, 2004). Subsequently globalization has encouraged foreign higher education providers, mainly from developed countries, to establish a local branch or satellite campus. Many of the institutions are completely privately owned, some being for-profit, others not-for-profit, and very few of them collaborate with or are affiliated to national public universities.

In 2003 it was estimated that more than 100 private universities had been set up in Sub-Saharan Africa (Varghese, 2004), the number of private higher education institutions being much greater and has been constantly increasing. However, although they exceed the public institutions in number, private institutions enrol relatively fewer students. The majority of them run professional or business and market oriented programmes such as management, accountancy, finance, law and information technology, which require little investment in infrastructure.

Some of the private institutions are registered and recognised by the national authorities, others are not, although the latter continue to enrol students. This is partly because many African countries do not have an appropriate framework or agency to regulate private institutions.

Although private higher education institutions have undoubtedly helped to alleviate the problem of massification, they can have negative effects on the African countries and their institutions. Many of the private institutions function purely as business enterprises and do not take into account the economic, social and cultural needs of the host country. Most of them do not undertake research and some of them offer programmes of dubious quality, giving rise to graduates having difficulty in subsequently finding suitable employment (Chevaillier, 2000). Also, they often draw most of their staff from public institutions, either for full-time employment by paying them attractive salaries, or for part-time teaching. This seriously affects the public institutions, which are already understaffed (Mohamedbhai, 2003).

Funding

One interesting innovation for alleviating the problem of funding higher education is the introduction by Ghana of the Ghana Education Trust Fund, known as the GETFund, financed from 2.5% of the Value Added Tax collected (WGHE, 2004). It was introduced in 2001 to provide supplementary funding for education at all levels. Most infrastructural development and acquisition of equipment in the higher education sector is now financed through this Fund, which also provides support for the development of faculty in tertiary education institutions.

The GETFund equally finances a Students Loan Trust, which provides loans to students of higher education to cover their living expenses while studying. Students can later repay their loans by outright cash payment, in instalments, or by mandating their employer to deduct their salary at source and pay the Trust.

Distance Education

South Africa is one country on the African continent which has made significant headway in providing distance education courses. Currently there are four institutions in South Africa providing distance education courses: Technikon SA, Technical College of South Africa, Vista University, and the University of South Africa (UNISA), the oldest mega-university. Indeed, the country's distance education programmes, which were started in 1946, cater for over a third of all university enrolments in South Africa, thus easing the burden on higher education institutions to provide on-campus education.

Several other countries have since established Open Universities, including Tanzania, Nigeria and Zimbabwe. Several universities, such as the University of Mauritius, are also using the dual mode approach of complementing their face-to-face teaching with distance education in order to ease the pressure of teaching.

Use of ICT and Virtual Education

The past few years have seen tremendous growth and development in the use of information and communication technologies (ICT) in higher education in Africa, notably in Sub-Saharan Africa, even if there is still a lot more room for improvement. Darkwa & Mazibuko (2000) mention Botswana, Namibia, South Africa, Tanzania and Zimbabwe as pioneers in the application of ICT in higher education. Other countries, including Côte d'Ivoire, Togo and Congo, are joining the distance education train with the commencement of pilot virtual programmes in their universities. The region can also boast of the African Virtual University (AVU), which is described by Darkwa & Mazibuko (2000) as the most ambitious distance education initiative on the continent to date. This project initially started with five Anglophone and five Francophone universities. It, however, encountered a number of challenges in its first phase of operation and has undergone a re-conceptualization since 2002 in order to respond to those challenges. It has now evolved into a consortium model and partners with 46 institutions in 26 African countries (Juma, 2006).

The Agence Universitaire de La Francophonie (AUF), an association of over 400 Francophone higher education institutions, including most of those in Africa, has also contributed significantly in promoting the use of ICT in Africa. The AUF initially planned to set a virtual university for Francophone countries and the project subsequently evolved into the Campus Numérique Francophone, a network ICT centres established with the assistance of AUF in the 1990s. The best known centre in Africa is the Campus Numérique Francophone de Dakar in Senegal which was established in 2000 and which functions as a well-equipped resource centre, promoting distance and ICT-enabled education, as well as digital literacy in students and staff (UNESCO, 2007).

However, a major constraint in extending and expanding the use of ICT in African higher education is the poor ICT infrastructure in Africa, especially Sub-Saharan Africa. In 2006, there were about 3 fixed line telephone subscribers per 100 inhabitants in Africa, compared with over 30 in the developed world. There is also considerable disparity among the African countries. 75% of Africa's 26 million fixed lines are found in just 6 of the 55 African countries, mostly in North and South Africa. Also in 2006, less than 5 out of every hundred Africans had access to the Internet, compared with an average of 1 out of every 2 inhabitants in the industrialised countries. The other major constraints are the very low Internet bandwidth and the very high cost of it (ITU, 2008).

Quality Assurance

Because of the need to regulate the growing number of private higher education institutions, many African countries have found it necessary to set up appropriate quality assurance mechanisms. In many instances these agencies have at the same time helped to promote quality assurance systems within public institutions. In Ethiopia, Ghana, Mauritius, Nigeria, South Africa, Tanzania and Uganda, the national agencies oversee quality assurance of both private and public institutions (Materu, 2007). In most cases the agencies have adopted practices and approaches similar to those in developed countries. They undertake institutional audits as well as programme and institutional accreditation. With regard to public institutions, in most cases the institutions do not relate quality assurance results to funding allocations.

Quality assurance has not yet pervaded Francophone African countries and there is hardly any such country (with the exception perhaps of Cameroon and Mauritius which are not in any case purely Francophone countries) which has yet set up a national quality assurance agency. In almost all Francophone countries it has so far been the regional organisation *Conseil Africain et Malgache pour l'Enseignement Supérieur* (CAMES) which has been responsible for issues related to quality in higher education.

Because of the disparate situation of quality assurance on the continent and the lack of African expertise in the field, there is an increasing recognition of the need for a regional approach to the problem. The AAU, with the support of the World Bank, is in fact in the process of launching a quality assurance capacity-building programme which could lead to the setting up of regional network on quality assurance (Materu, 2007).

Networking and Partnerships

Another interesting regional approach used to overcome the problem of resource constraints in higher education is multi-country networking and partnerships. Thus, the AAU has established the Networks Program for collaborative regional networks for graduate training and research, with an identified institution serving as focus. Examples are the University of South Africa (UNISA) for accountancy; University of Ouagadougou for environmental biotechnology; and University of Ibadan for refugee and humanitarian studies (AAU, 2007a).

In 2004, 11 African universities and 2 higher education organizations in 5 countries created a consortium with a view to improving bandwidth capacity and reducing high bandwidth cost. The consortium was able to sign an agreement with the satellite provider, Intelsat, to bring much higher bandwidth capacity at considerably reduced price to academic institutions on the continent (Partnership for Higher Education in Africa, 2007).

An interesting innovative strategy to boost research in Africa through partnership is the Database of African Theses and Dissertations (DATAD), a programme launched by the AAU in 2000 to create an online database of African theses and dissertations which can then be accessed through the internet (AAU, 2007b). The eleven institutions in ten African countries participating in the programme include the University of Cheikh Anta Diop, University of Edouardo Mondlane, University of Ghana and Kenyatta University, all four of which participated in the study described in the second part of this report. The objective of the programme is to put African research output onto the mainstream of world knowledge, and to make local empirical data available to students both in Africa and overseas.

3.4 Institutional Innovative Strategies in Africa

Many higher education institutions in Africa have been pushed into finding innovative solutions to the urgent challenge of providing effective higher education to large, unplanned masses of students. Some of the innovative strategies being adopted and applied in Africa, at different levels, are outlined below.

Funding

Many institutions, which charged minimal fees, have had to resort to fee increments in order to meet their budgeted financial targets since they do not have sufficient subventions from the state.

Obanya (2004) mentions the introduction of user fees in institutions which did not originally charge such fees. He mentions some other solutions, including a greater use of new technologies as management tools (for student records, time-tabling, setting and grading of examinations, etc.), and de-investment in municipal services on university campuses.

A striking example of innovative management approaches to generate funds is the University of Makerere in Uganda. In the late 1980s it was on the verge of bankruptcy but it has subsequently increased its student numbers fivefold and is investing in its infrastructure. It achieved this by running separate programmes for those students who could not get admitted to the university, and charging them fees. Currently, about 80% of the university's students are charged fees. Also, the institution generates a third of its revenue from a variety of commercial ventures such as a bakery and an in-house consultancy (*The Economist*, 2005). A similar approach of running parallel programmes for generating funds was followed by the University of Nairobi, as described in the second part of this report.

Relevance

An important aspect of sustainable reform of higher education institutions is relevance in their course delivery. Their courses must be structured such that they will be relevant to the societies and there will be a ready market for students who graduate from them. In this regard, institutions need to determine their needs and tailor their courses accordingly.

Effah (2005) makes mention of the fact that certain institutions have made some effort to address the issue of relevance by introducing innovation in the curricula that can make graduates more suitable for employment in industry as well giving them the opportunity to be self-employed.

Quality Assurance

In many Anglophone African countries, higher education institutions have taken the initiative of putting in place quality assurance systems, often even before the setting up of a national agency, as a result of developments in institutions in developed countries with which they have linkages. Factors that have prompted institutions to implement quality assurance approaches include coping with large numbers of students, the pressure for accountability and transparency from the stakeholders, competition with other national or regional institutions in attracting students, and promoting student exchanges and research collaboration with other institutions. The majority of public higher education institutions in Ghana, Nigeria, South Africa and Uganda have established internal quality assurance systems. However, putting in place quality assurance systems within an institution involves considerable paper work and requires resources, human and financial. At a time when there is a shortage of both and when staff are overloaded with teaching, implementing effective quality assurance practices becomes almost impossible. The shortage of expertise in the field at institutional and national levels is also a major handicap.

With regard to African Francophone higher education institutions, many of them are in the process of shifting their course structures to the Licence-Maitrise-Doctorat (LMD) system following similar reforms taking place in European institutions under the Bologna Process. In so doing, they have to address quality assurance issues. The University of Cheikh Anta Diop in Senegal is perhaps the one that has progressed most in this area. Generally, though, no Francophone higher education institution has yet adopted the Anglophone quality assurance approach of having to satisfy the ‘fitness for purpose’ criterion, that is the ability of the institution to meet the acceptable standards which it has itself specified.

Quality of Student Life

Many countries in Africa are making great efforts to curb the rapid increase in enrolment by establishing annual intake limits at the system level (WGHE, 2004). However, the students that are already in the system need to be catered for to make academic life as comfortable and useful as possible for them.

Obanya (2004) makes mention of counselling centres in higher education institutions as an important facet of building a knowledge economy. This is undoubtedly because such centres help students deal with stressful issues, organize holistic training sessions for the students including talks, seminars, forums, career development programmes etc., which equip the students with life skills to face the world after graduation. In addition to this, students are usually given a voice in the higher education institutions through the various kinds of student governing bodies which sometimes negotiate with management, government and other stakeholders for the improvement of their lot. He also suggests that the management of most tertiary institutions can be made easier through a greater involvement of students in decision-making and in the direct execution of policies

Infrastructure

Ajayi *et al.* (1996) propose rehabilitation and revitalization of the existing infrastructure of higher education institutions. They further advocate changes in policies that concern the university’s role in providing residential accommodation for students and staff since “universities can no longer lock up a very high proportion of their financial resources in the provision of municipal facilities.” They propose, as a solution to this challenge, that universities reach agreements with government, municipal authorities and entrepreneurs to undertake the provision of these facilities.

With regard to the provision of accommodation, collaboration already exists between the universities and the private sector to provide hostels and other forms of affordable housing to students in a number of institutions. Students, on their own initiative, are also pooling their efforts to raise funds for accommodation. A typical example of this is a self-financing project by students of the Kwame Nkrumah University of Science and Technology, Ghana, who are willingly contributing to build themselves a new student hostel, etc. (WGHE, 2004).

Teaching, Learning and Research

It is reported that certain higher education institutions are involved in innovations such as staff development programmes, student/staff assessments, external examinations, extra financial and other incentives to staff, expansion of academic facilities with income from fee-paying students, etc. (WGHE, 2004). This improves the situation for the academic staff and the students in their teaching and learning process.

In addition to these, many tertiary institutions are seeking creative ways of attracting young and brilliant students to remain in the departments and take up teaching and research. A typical example of this is Pretoria's Young Scholars' Programme, a laudable effort which aims at identifying and encouraging potential scholars and supporting them in their research as this helps to ensure continuity in the provision of top-level academic staff in South Africa's tertiary institutions, and prevent many brilliant young students from being pulled away to seek greener pastures in other countries, thus curbing the problem of brain drain (WGHE, 2004).

In order to tackle the problem of large numbers in classrooms, certain institutions rely heavily on ICT in the form of Power Point presentations, Internet-based assignments, etc. Students are also assigned projects in groups to ensure maximum participation.

PART II

**EFFECTS OF MASSIFICATION ON SEVEN AFRICAN
UNIVERSITIES**

CHAPTER 4: BACKGROUND

4.1 Objectives, Scope and Methodology of Study

As mentioned earlier, the present study is a follow-up to the WGHE (2004) Innovations Study. It aimed at specifically examining a small number of institutions in order to first assess the effects of massification on teaching, examination performance, physical facilities, institutional management, financing and student quality of life, and then to document the innovative ways in which those institutions are addressing the challenge of massification.

The study was preceded by a call for proposals issued by the AAU in August 2006, on behalf of the WGHE, inviting institutions interested in participating in the study to submit proposals. The AAU subsequently appointed two independent assessors who vetted the proposals received and presented a shortlist of institutions by merit. The AAU then drew up an additional list of institutions to ensure sub-regional and linguistic representation in the study.

The final seven selected institutions for the study were as follows:

1. The University of Cheikh Anta Diop, Dakar, Senegal
2. The University of Edouardo Mondlane, Maputo, Mozambique
3. The University of Ghana, Legon, Ghana
4. The University of Nairobi, Kenya
5. The University of Ouagadougou, Burkina Faso
6. Kenyatta University, Nairobi, Kenya
7. The National University of Science and Technology, Bulawayo, Zimbabwe

Each selected institution was asked to prepare a detailed Institutional Report describing the problem of massification and the innovative steps taken to overcome the negative effects. A comprehensive set of Guidelines was prepared to assist the institutions in this task. The executive head of each institution was also asked to appoint a team, headed by a coordinator or team leader, to collect data using a variety of instruments such as questionnaires, group discussions, meetings with management, staff, administrators and students, and to prepare the Institutional Report. The composition of the teams of the seven institutions is given in Annex 1 of this report.

A Consultant was appointed to coordinate and oversee the whole study, with the support and assistance of the WGHE Coordinator of ADEA at the seat of the Association of African Universities in Accra, Ghana. The Consultant visited most of the institutions participating in the study to further assist the team in the preparation of the Institutional Report, and also to meet the institutional head, administrators, students and other relevant stakeholders in order to get a better understanding of the problem of massification in the respective institution. The draft Institutional Reports were reviewed by the Consultant who, where appropriate, made suggestions for improvement and/or for additional information. An analysis and synthesis of the finalised Institutional Reports is presented in this report. The seven Institutional Reports are housed at the Association of African Universities.

4.2 The Guidelines

The Guidelines sent to the team in each participating institution was an important instrument in this study as it determined, to a large extent, the information subsequently provided by each institution. It was carefully crafted to ensure that while all possible areas were covered, there

was flexibility to enable each institution to reflect its own specificity. The Guidelines also laid down the period to be covered in the study and clarified the meaning of some terms commonly used.

The Guidelines document was basically in two parts. The first part gave the background to the study, including its scope and approach. This part also gave some information and data on the challenge of massification, especially as it relates to Africa. No definition of massification was provided but the background information implied that massification meant a massive increase in student enrolment. The second part contained instructions to the staff preparing the Institutional Report with regard to the areas to be covered and the data to be supplied.

The Guidelines are reproduced in Annex 2.

4.3 Limitations and Constraints of the Study

It is acknowledged that this study has a few limitations. First, only a few institutions were surveyed and they are by no means representative of the vast higher education sector in Sub-Saharan Africa. However, it was felt that an in-depth study of a few institutions would reveal more detailed information about the approach to massification than would a wide coverage of institutions surveyed through a general questionnaire.

Second, apart from the fact that they are all public-funded universities, the seven institutions are quite different in history, size, method of operation, sources of funding, etc. As a result, in many cases a direct comparison of effects and innovative approaches was not always possible.

Third, several of the institutions did not, in their Institutional Reports, cover all aspects pertaining to massification as outlined in the Guidelines provided, although such aspects were relevant to them. This is partly due to the difficulty encountered in collecting data, which is highlighted later in Chapter 7. It was therefore not always possible to draw comparison between the institutions.

Another constraint faced by the teams in the institutions was meeting and interviewing staff, both academic and administrative, in order to obtain information and views. Most of the staff, including members of the teams, were extremely busy with precisely duties linked to massification, such as teaching, dealing with the examination process, preparing for graduation of students, etc. It is indeed to the credit of the teams in the institutions that they finally managed to submit fairly comprehensive Reports. All the teams gave the feedback that collecting data and preparing the Report had been difficult and time-consuming but at the same time a most informative and enriching experience, as they had learnt so much about their own institution.

In spite of these limitations, African public higher education institutions will find the general picture that emerges from this report as one which they are familiar with, and will no doubt recognise many of the findings as being relevant to them as well.

4.4 National Higher Education Systems

This section gives a brief background of the higher education systems in the six countries where the institutions are located so as to provide a better understanding of the context in which the institutions operate. All the information has been obtained from the Institutional

Reports, except the country populations, mostly 2005-2007 estimates, which are from Wikipedia.

Burkina Faso (Population: 13 million)

Burkina Faso has three universities with a total student enrolment in 2006 of about 28,000, the University of Ouagadougou being by far the oldest and largest university with an enrolment approaching 24,000. The second university, Polytechnic University of Bobo-Dioulasso, was created in 1997 and the third one, University of Koudougou, in 2005.

Private higher education institutions started appearing in 1990. Currently, there are some 25 of them with a total enrolment of about 5,000.

Because the country adopts the Francophone system of admitting all candidates having successfully obtained the Baccalaureate, and in view of the improvement in the output from the primary and secondary education sectors, it is estimated that for the academic year 2009-2010 some 75,000 students will qualify for entry into the higher education system - a formidable challenge.

Ghana (Population: 23 million)

Ghana has a much-diversified tertiary education sector, the public institutions comprising 6 universities, 10 polytechnics and 4 professional institutes. There exist formal links among most of these institutions. It has also several private universities, university colleges and institutes, the first private institution having been set up in 1979. The total student enrolment in the tertiary education sector in 2006 was roughly 125,000. Enrolment in the public institutions accounted for about 94% of total enrolment, and enrolment in the 10 public polytechnics represented about a third of total enrolment in the 6 public universities.

Ghana also has a well-established National Council for Tertiary Education, which is advisory to the government, and a National Accreditation Board which was set up in 1993.

Kenya (Population: 35 million)

Kenya has 7 public universities, with a number of constituent colleges, and over 20 private universities. It also has several polytechnics and tertiary education colleges. The total enrolment in the universities in 2006 was about 93,000, the public universities accounting for 85% of that enrolment. Kenya has a Commission for Higher Education to oversee the sector, as well as a Higher Education Loans Board (HELB) to provide loans to needy students. However, the resources available to the HELB are believed to be insufficient to cater for the students' funding needs.

The pressure for accessing university education is huge and cannot be fully met by the existing institutions. Thus, the public universities are able to absorb only about 6% of those graduating from the secondary school system.

Mozambique (Population: 21 million)

The higher education system in Mozambique comprises 13 public institutions and 13 private ones, with a total student enrolment in 2006 of about 43,000, and with the public institutions accounting for 74% of the enrolment. The public sector comprises 2 universities and several polytechnics, technical institutes and academies, but is dominated by the two universities, the University of Eduardo Mondlane and the Pedagogical University, each enrolling about 14-15,000 students. The private sector comprises 5 universities, the first having been set up in 1995 and several polytechnics and technical institutes.

The demand for higher education, especially in the public institutions, far outweighs the supply. This is, for example, reflected in the fact that, in 2006, there were 15,000 candidates applying for 2,400 places at the University of Eduardo Mondlane.

Senegal (Population: 12 million)

In Senegal, the University Cheikh Anta Diop dominates the higher education scene and is, in fact, one of the oldest universities in western Africa. The second university in Senegal, the University Gaston Berger, was set up in 1990 and currently has about 4,500 students, representing only about 8% on the enrolment at University Cheikh Anta Diop. A few other public universities have only recently been set up. There are also a number of *Ecoles* in specialised areas. The total student enrolment in the public institutions in 2006 was of the order of 63,500.

Private higher education institutions started appearing in Senegal as from the early 1990's. The setting up of private institutions has subsequently been encouraged by the government because of the inability of the public ones to cope with the demand. To date, there are some 58 such institutions, including 6 universities, with a total enrolment of about 25,000; and it is a growing sector.

Zimbabwe (Population: 13 million)

Zimbabwe has 9 public universities, the University of Zimbabwe being by far the oldest and largest, having an enrolment of 11,000 students, which is twice the enrolment of the second university, the National University of Science and Technology. The precise enrolment in the public universities is not known but it is estimated that it was of the order of 28,000 in 2006, excluding the Zimbabwe Open University which must have an enrolment of roughly 30,000.

The first private university appeared in 1992 and there are now 4 such universities, 3 of which are of religious denomination. However, there are no records of enrolment in the private universities.

Recently, the government introduced a cost-recovery scheme by introducing fees for all students, although the level of fees is relatively low to make a significant contribution to the universities' budget. Although there was some initial resistance from the student, the latter have now accepted that they have to contribute, even if the government still has to bear the major brunt of public university expenditure.

The democratisation of access to higher education in Zimbabwe can be gauged by the statistics related to admissions at the National University of Science and Technology. Previously, that university was admitting 10-12% of eligible applicants; it is now admitting about 29% of the annual average 4,500 applicants.

4.5 The Seven Universities

Table 4.1 shows the year of creation and current student enrolment of the seven universities, all of them public. University Cheikh Anta Diop, University of Eduardo Mondlane, University of Ghana and University of Nairobi are all what can be termed as 'first generation' universities, that is those created just after independence. They are all the primary public institution in their respective country. The years of creation indicated in Table 4.1 are when they actually acceded to the status of university, although all of them were set up earlier as Colleges.

Table 4.1: Year of Creation and Current Student Enrolment

University	Year Created	Current* Student Enrolment
University Cheikh Anta Diop (UCAD)	1957	55,850
University of Edouardo Mondlane (UEM)	1962	14,199
University of Ghana, Legon (UG)	1961	28,480
University of Nairobi (UoN)	1964	39,994
University of Ouagadougou (UO)	1974	23,780
Kenyatta University (KU)	1985	21,150
National University of Science & Technology (NUST)	1991	5,563

* 2005, 2006 or 2007

University of Ouagadougou, although being the first public university in Burkina Faso, was created a decade after the ones mentioned earlier. Kenyatta University and National University of Science and Technology are both 'second generation' public universities in the country, the latter being the youngest and smallest institution of the seven surveyed. Kenyatta University was in fact a constituent college of University of Nairobi until it became a university in 1985.

Table 4.2 shows a few characteristics of the institutions, such as the proportion of female enrolment, the academic staff-student ratio, the computer-student ratio and the proportion of the enrolled students provided accommodation by the institution, all the figures being for 2006.

Table 4.2: Some Characteristics of the Universities in 2006

University (refer to acronyms in Table 4.1)	% Female Enrolment	Staff/Student Ratio	Computer/Student Ratio	% Students Provided Accommodation
UCAD	...	1:43	1:18	9%
UEM	27%	1:17	1:3	8%
UG	41%	1:30	...	30%
UoN	35%	1:32	1:20	37% *
UO	...	1:62	1:65	7.5%
KU	50%	...	1:31	45% **
NUST	33%	1:24	1:4	3%

... No data available * Undergraduate enrolment ** Excluding Open Learning students

CHAPTER 5: EFFECTS OF MASSIFICATION ON THE INSTITUTIONS

This chapter deals with the effects of massification on the seven institutions which participated in the study. The information has been obtained directly from the Institutional Reports, supplemented in a few instances by what the Consultant observed during his visit to the institutions. Not all the effects as reported in the Institutional Reports are covered. The idea here is to give a general indication of how massification has affected the institutions. More detailed information on any particular institution can be obtained from the respective Institutional Report. However, in some cases, the institutions did not report on all the effects as suggested in the Guidelines at Annex 2 of this report. .

5.1 Increase in Student Enrolment

Enrolment from 1986-2006

Table 5.1 shows the student enrolment in the institutions over the period 1986-2006. It should be noted that data were not available for the earlier years at University of Ouagadougou and Kenyatta University. In fact, a few of the other universities also reported the difficulty experienced in retrieving comprehensive and consistent data from different sections of their institutions because of poor record keeping..

Table 5.1: Evolution of Student Enrolment, 1986-2006

University (refer to acronyms in Table 4.1)	Student Enrolment in Year					Aggregated Annual Enrolment Increase	
	1986	1991	1996	2001	2006	1996- 2006	2001- 2006
UCAD	12,721	17,810	21,410	24,776	55,850	16%	25%
UEM	1,630	3,016	5,200	7,085	14,199	17%	20%
UG	3,564*	4,514	8,495	15,991	28,480	23%	16%
UoN	6,506	14,606	13,538	13,722	32,305	14%	27%
UO	...	...	9,522	11,824	23,780	15%	20%
KU	...	...	...	7,057**	21,150	-	50%
NUST	-	256	1,496	2,568	5,563	27%	23%

* 1988 figure ** 2002-03 figure ... No data available

Although there was a steady increase in student enrolment in all the institutions from 1986-2006, the marked increase occurred as from 1996, and especially over the period 2001-06. Table 5.1 shows the annual percentage increase in enrolment aggregated over the decade 1996-2006 as well as for the period 2001-06. The increase over the last five years was considerably higher than that over the last decade for all the institutions except University of Ghana and National University of Science and Technology. University of Ghana experienced a consistent increase in enrolment since 1991. The 50% annual increase for Kenyatta University over the past five years is quite staggering. This has been achieved mainly through open learning and the creation of open learning centres in different parts of the country.

What is clear is that all the institutions have experienced an annual increase in enrolment of the order of 15-25%, whether aggregated over the last decade or over the last five years.

Reasons for Increase in Enrolment

The rise in institutional enrolment was naturally a response to the increase in demand for higher education nationally. The latter was due mainly to the rapid increase in primary and secondary school enrolment and output, partly because of population growth and partly because of improved access to schooling. In Kenya, from 1963 to 2002, primary enrolment increased from 890,000 to 5.9 million, and secondary enrolment from 31,000 to 650,000. In Zimbabwe, secondary school enrolment went up from 537,427 in 1986 to 887,697 in 2006, a 65% increase.

The change in the Ghanaian secondary education system in the 1990's, shifting from the British (GCE) to the American (SSCE) system, also contributed to the increase in the output from the secondary education sector, thus increasing the demand for higher education. Similarly, in the early 1990's in Kenya, the education system, comprising 13 years of schooling and 3 years of university education, was changed into 12 years of schooling and 4 years at university, resulting in an increased university student population.

The increased enrolment in the universities surveyed is also a reflection of increased higher education enrolment in the respective countries. In Kenya, for example, the total higher education enrolment in 1996 was 40,816, which then went up to 49,400 in 2001 and 93,341 in 2006, the bulk of whom (85% in 2006) were in public universities. In Zimbabwe the enrolment at the University of Zimbabwe in 1980, then the only university in the country, stood at 2,200; it quadrupled to 9,017 in 1990, which then led to the creation of the National University of Science and Technology. Yet, it is estimated that currently the public universities in Kenya absorb no more than 6% of the secondary school graduates, and the higher education enrolment ratio in Burkina Faso is roughly 3%. The pressure nationally for enrolling an even greater number of students in all the higher education institutions surveyed thus remains and will no doubt continue to grow.

The growing demand for higher education can also be gauged from the number of applicants to the various institutions. In Ghana the number of applications for admission to University of Ghana increased from 4,712 in 1988 to 17,813 in 2006, and this in spite of other universities having been created. University of Edouardo Mondlane in Mozambique selects its students through an entrance examination. The number of candidates for the university entrance examination increased from about 7,000 in 1999 to over 16,000 in 2006.

In Francophone countries, including Senegal and Burkina Faso, all students who obtain their Baccalaureat at the end of the secondary cycle have to be admitted to a university. This places enormous pressure on University Cheikh Anta Diop and University of Ouagadougou to admit the maximum number of eligible candidates, although lately University Cheikh Anta Diop has been somewhat restricting its intake. Also, many of the students repeat one or several years at the university, which compounds the situation of increasing student population on the campus. On the other hand, the universities in Ghana, Kenya, Mozambique and Zimbabwe practice a selective entry policy enabling them, to some extent, to limit the intake according to their capacity. The National University of Science and Technology now admits just under 30% from the 4,500 applicants, the University of Edouardo Mondlane roughly 15% from 16,000 candidates and the University of Ghana enrolls about a third of all qualified applicants. It was reported that, in Kenya, although some 60,000 candidates qualify for admission to public universities, only about 10,000 get admitted because of limited capacity, about 3,000 get admitted to private universities and some 5,000 join polytechnics or other tertiary education institutions.

One reason for the greater enrolment over the last five years must be the change in policy vis-à-vis higher education. Over the whole decade of 1990's funding and donor agencies were emphasising the point that, for developing countries, funding basic education would yield greater economic return than financing higher education, thus minimising the importance of the latter. It was only at the end of the 20th century that a change in policy occurred and the crucial role played by higher education in national development was recognised. Developing countries were then encouraged to increase higher education enrolment.

Female Enrolment

One positive aspect of massification is that it has helped to increase the participation of female enrolment in higher education in all the institutions. University of Cheikh Anta Diop and University of Ouagadougou did not give the breakdown of their student enrolment by gender, but undoubtedly the number of female students enrolled must have increased over the years.

At the University of Ghana, the enrolment of female students increased from 925 in 1991, representing 20% of total enrolment, to 11,748 in 2006, representing 41% of total enrolment. Similarly, female enrolment at the University of Edouardo Mondlane increased from 3,016 in 1991 to 14,199 in 2006, although this represented only a slight increase from 25% to 27%.

In some of the institutions, affirmative action has been used to increase female enrolment. At the National University of Science and Technology, by lowering the entry requirements for female applicants the proportion of female students at the university increased from 14% in 1991 to 33% in 2007. In Kenya the Joint Admissions Board, which determines the admission of students in all public universities in Kenya, has lowered the number of points required for admission for females. As a result, in 1991/92 female enrolment at the University of Nairobi was 22% of total enrolment; in 2006/07 this proportion increased to 34%. Kenyatta University has gone further in its admission policy by lowering another point for female students wishing to study a science and technology programme. In 2007 nearly 50% of Kenyatta University's student population were females, although it reported that female students were still disproportionately represented in science and technology programmes.

5.2 Staffing

Staff/Student Ratio

The increased enrolment in students requires an increase in academic/teaching staff to maintain the quality of teaching and learning if the face-to-face mode of education is used. In most institutions this has not taken place. Table 5.2 shows the current staff/student ratios for the institutions.

In University Cheikh Anta Diop in the 1980's and early 1990's, the average staff/student ratio was about 1:27. This then increased slightly to 1:33 up to the beginning of the 21st century and in 2006 the average ratio for the whole university was 1:43, with some departments and academic units having a far greater ratio. Its Faculty of Letters and Humanities had the worst staff/student ratio of 1:118.

A similar situation was reported at the University of Ouagadougou where the staff/student ratio, which was previously about 1:35, had gone up to 1:62 in 2006. The University of Nairobi had the comfortable staff/student ratio of 1:13 in 2001 but this increased to 1:32 in 2006 and its School of Mathematics was reported to have a ratio of 1:110, instead of 1:12 as

prescribed for science-based courses by the Commission for Higher Education of Kenya. The average staff/student ratio at both University of Ghana and Kenyatta University in 2006/07 was about 1:30. The situation at the National University of Science and Technology in 2006 was not too bad, having a ratio of 1:24. The only institution of those surveyed which was not really experiencing a staffing problem was the University of Edouaro Mondlane where the average ratio in 2006 was 1:17, excluding part-time staff, and 1:11 if the latter were included.

Most institutions were unable to recruit staff either because of shortage of funds or unavailability of qualified candidates. The National University of Science and Technology reported a vacancy of 40% in its complement of academic staff. In 2006, the University of Ouagadougou had 383 teaching staff and it estimated that to meet the full teaching requirement of the institution, it needed an additional 114. Most institutions have to have recourse to part-time staff but these are not always qualified or experienced in teaching at higher education level, and contribute little to academic or administrative duties other than teaching.

Increased Teaching Load

The fewer academic staff in an institution means that the existing staff have to shoulder increased teaching hours. Often large classes have to be split into fewer groups with the same lecture repeated to all the groups at different times. In addition to teaching, staff have to supervise practicals and tutorials, set examination papers, mark large numbers of scripts and deal with administrative duties. As a means of increasing access and resolving the funding problem, the University of Nairobi introduced parallel programmes for self-sponsored students, the additional teaching for these programmes being undertaken mainly by existing staff who are paid for the extra teaching over and above their prescribed teaching load. This has now become an attractive way for staff to supplement their income. In some departments at the university staff have a teaching load of 18 hours a week. And as many of the self-sponsored programmes are run during the normal vacation time, many staff are teaching throughout the year without taking any of their entitled annual leave.

Unlike what normally prevails in universities, there are more senior academic staff than junior ones at the University of Cheikh Anta Diop. In Francophone universities the teaching load of staff in different categories is prescribed, the senior staff having a lower mandatory teaching load. The increase in the proportion of senior staff puts an additional financial burden on the institution as the extra teaching hours have to be undertaken by the junior staff against payment or by part-time staff. The University Cheikh Anta Diop reported spending nearly US \$2 million each year on payment for additional teaching.

Research

Because of the very heavy teaching load, the staff have hardly any time to devote to research. Although a few institutions reported on the current research activities, none could clearly show the effect of massification on the research output of their respective institution. They did, however, mention that research was most likely being neglected at the expense of teaching. Indeed, as pointed out in the University of Nairobi Report, the desire to have an extra remuneration from teaching on self-sponsored programmes is gradually diverting the interest of lecturers from research, with serious consequences on the institution's research output. Most institutions use research output as an important criterion for promotion. Because of their limited research, many young staff, overburdened with teaching, have fewer chances of being promoted, thus affecting their morale.

5.3 Teaching & Learning

Physical Facilities

Quality teaching and learning requires not only adequate human resource but also sufficient and functional physical facilities and equipment. In many institutions the lecture rooms and theatres are not large enough to accommodate the huge numbers of students. At University of Ghana and University Cheikh Anta Diop students over-spill outside the lecture theatres and, in spite of the use of microphone and loudspeakers, they can hardly hear and follow the lecturer. When large groups are split into smaller ones, there are often insufficient lecture rooms. At the University of Nairobi, timetable clashes are common, particularly at the beginning of new semesters. Such clashes are often a source of conflict among academic colleagues, which undermines team spirit. In some cases, courses have been deferred to subsequent semesters due to inadequacy of appropriate lecture rooms or overloading of staff.

Although there was a shortage of academic staff in almost all the institutions, the actual number of staff increased over the years in most of them. For example, at the University of Nairobi the number of academic staff increased from 1,233 in 2001/02 to 1,497 in 2006/07, without a corresponding increase in office space. As a result, the University of Nairobi reported that in many Departments as many as four lecturers share one office, hampering consultation between students and staff. Adequate furniture and office equipment was not always available.

Finally, many of the campuses have not made provision for the needs of physically disabled students and staff.

Tutorials and Practicals

In many programmes, tutorials sessions in small groups have been abandoned because of the large cohorts of students, the benefit of close interaction with the lecturer thus being lost. Tutorials are particularly important for first year students who are ill-prepared for university education. At the University of Edouardo Mondlane in some undergraduate programmes the final year dissertation, an important element of learning, has been replaced by exam papers or a report. In many of the programmes at Kenyatta University as well the final year project has been made optional and only about 10% of the students are undertaking it. Practicals and site visits, prescribed in the curriculum, are often either reduced or not undertaken. Many of the laboratories are not functional because of breakdown of the equipment as a result of poor maintenance, and lack of supplies. Where laboratory practicals are held, these often take the form of demonstrations to a large group of students, the latter being mere onlookers with no opportunity to handle instruments nor to be directly involved in the experiments. The University of Nairobi reported the situation in its Medical School where for the Anatomy session the number of students has increased from 75 in 1986 to 195 in 2006, resulting in a situation where about 13 instead of the ideal 6 students share one dissecting table and one cadaver.

Student Assessment

Massification is also posing serious problems for student assessment and the conduct of examinations. In view of the large number of students it is becoming increasingly impracticable to make provision for adequate continuous or interim assessment. At University of Ghana only one continuous assessment is made per semester and it has been decided that interim assessment no longer contributes to undergraduate grades, as a result of which students are graduating with little practice for undertaking research, critical analysis and writing. Examinations have to be held more frequently and lecturers often repeat the same

exam paper to different groups of students. The nature of examination questions has also changed, most lecturers preferring structured and multiple choice questions which are easier to mark. Such questions, however, test knowledge acquisition rather than knowledge application.

Ensuring examination security also becomes problematic with large cohorts of students. At University of Nairobi the rule that there should be one invigilator for a maximum of 50 students being examined is not always adhered to, thus increasing the risk of cheating by the students. Often the rooms used for examinations do not have proper seating facilities to ensure examination security and more students are seated than the minimum allowed according to university regulations. The pressure on lecturers to mark large amounts of scripts in limited time also increases the risk of human error. The University of Ghana reported that the recent trend of the growing number of upper grade degrees could well be attributed to inadequate student evaluation leading to a devaluation of the university's degrees.

Library

The university library is an important resource for students and staff in teaching and learning. Yet, in almost all the institutions, the available library facilities have not kept pace with increasing enrolment because of lack of funds. At University of Nairobi the library system has a holding of some 600,000 bound volumes, which is far short of the 60 volumes per student recommended by the Commission for Higher Education.

Because of shortage of funds, the escalating costs of books on the international market and the devaluation of the local currency, most university libraries have been unable to replenish their stock with additional holdings. Fig. 3.1 shows that at University of Nairobi the number of volumes acquired each year has in fact been decreasing with rising numbers of students. At University of Ghana the library holdings, which were about 300,000 in 1986, increased to only about 380,000 in 2006, whereas enrolment has increased by eight fold over the same period. At National University of Science and Technology the library was allotted 2.7% of the total institutional budget in 2003/2004, but this got reduced to 1% in 2005, 0.7% in 2006 and 0.4% in 2007. In several institutions students have therefore resorted to photocopying of books, although this may flaunt copyright laws.

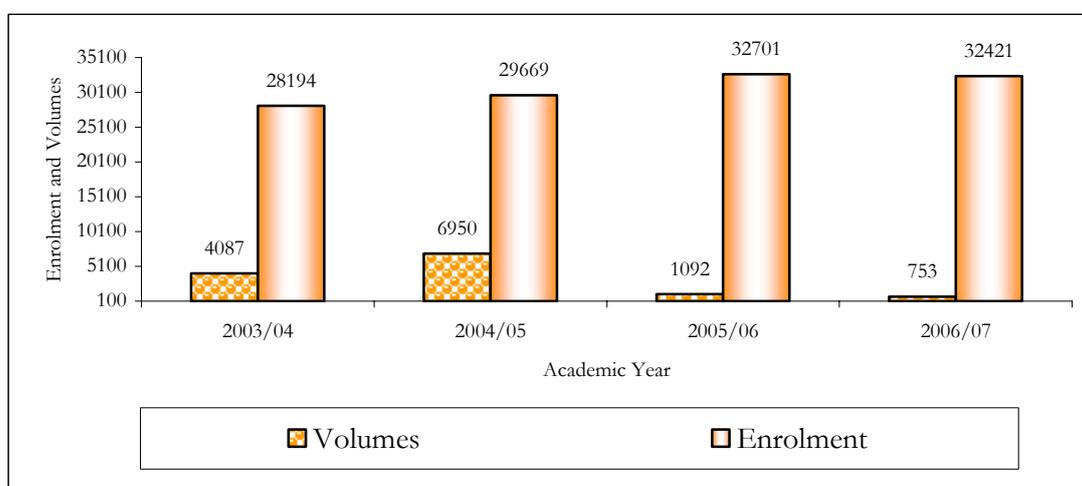


Fig. 5.1: Total Student Enrolment and Volumes Received Annually at University of Nairobi Library

The capacity of the university libraries is also inadequate for the large student population. At University of Nairobi, the main Jomo Kenyatta Memorial Library was designed to accommodate 1,500 students but at times it now has to cope with 8,000 students a day. At University of Cheikh Anta Diop the main library was extended in 2000/2001 to have an increased seating capacity of 1,700; however, the electronically captured statistics at the controlled entrance and exit gates showed a far greater number of students entering and leaving the library daily.

At the National University of Science and Technology, because of lack of space on campus, the university library is located off campus, making it difficult for students to easily access the library facilities.

Information and Communication Technologies (ICT)

ICT has become a global engine for acquiring and disseminating knowledge and as such plays an indispensable role in teaching and learning in higher education, in addition to its importance in a myriad of other academic and administrative activities. The development and availability of ICT in the institutions surveyed vary from institution to institution. The current (2006) computer/student ratios for the institutions are shown in Table 5.2.

At the University of Edouardo Mondlane the average computer-student ratio improved from 1:10 in 1986 to 1:3 in 2006; and the number of internet points, which was about 500 in 1996, has increased to more than 4,000 in 2006. At the National University of Science and Technology the overall computer-student ratio is less than 1:4. Internet is widely accessible on campus and at its three satellites off campus, each staff member having access to the internet and all students being able to access internet through at least 15 designated points on campus.

The University of Nairobi has a university-wide computer-student ratio of the order 1:20, which it considers to be not quite adequate for the rising student population. The university has well-stocked computer laboratories, especially for students, and most departments and institutes have their own computer laboratories. It has installed a Wide Area Network (WAN) as well as a Campus Wide backbone network.

At the University of Cheikh Anta Diop, a comprehensive ICT network has been set up with French assistance since 2000. It comprises a triangular backbone extending over about 3km, inter-connecting all the academic units of the campus either through an optical cable or through wireless connection. The future plan is to make fuller use of ICT for distance learning, in the use of telemedicine, for the creation of a research database and for internet telephony. The overall estimated computer-student ratio is 1:18.

The ICT situation is less satisfactory at Kenyatta University and University of Ouagadougou. At Kenyatta University the computer-student ratio is 1:31 which falls far short of the demand. Also, only 15% of the computers have internet connectivity. The absence of broad bandwidth constrains the institution from developing its networking programme. At University of Ouagadougou the computer-student ratio is 1:65 with the result that a significant number of the students are computer-illiterate. This severely handicaps them when they have to prepare their project report or thesis. Also, there are frequent breakdowns of the university server.

5.4 Student Performance and Employment of Graduates

Student Performance

Massification and the consequential problems can affect the performance of students, and the study made an attempt to gauge that particular aspect in the institutions. At University of Edouardo Mondlane the dropout rate of the students in 2006 for the whole institution was estimated to be in the range of 15-28%, the larger percentages being for earlier years. In 2006 only about 6% of the students completed their degrees in the normal specified time, compared to 17% in 2001. Also, in 2006 41% of the students took one or more additional years to complete their degree, whereas the corresponding figure in 2001 was 28%. There has been some deterioration in the student performance over the past five years at the University of Edouardo Mondlane.

The University of Nairobi reported that in the 1990's students used to take much longer to complete their degree programme as a result of frequent closures caused by student unrests. The situation has since improved. For the purpose of this study, the University of Nairobi examined the annual performance of 3,087 undergraduate students admitted to its six Colleges in the academic year 2001/02 as they progressed through to their fourth year in 2004/05. The proportion of students who managed to progress to the fourth year varied from 58% to 95%, depending on the College, the average attrition rate for the whole cohort being 21%.

Because of the admission system in Francophone universities, the success rates are usually quite low, especially in the first couple of years, compared to what prevails in institutions which have a selective process of admission. At University Cheikh Anta Diop the average success rates for first degree studies (first cycle) ranged roughly between 35-45%, whereas the rates in the subsequent years (second cycle) were between 60-80%, although there was very significant variation in the figures in the different Faculties. There was no noticeable difference in the success rates over the period 1986 to 2006, which means that massification has not really had any significant effect. On the other hand, at University of Ouagadougou the success rate of the students for the whole university decreased from 66% in 2001 to 56% in 2006.

The National University of Science and Technology was the only institution which mentioned that the failure rate and number of repeaters decreased over the years. The statistics there show that in the 1990's the average number of repeaters was of the order of 20%; in 2006 this figure had come down to 10%. The University of Ghana quoted actual student failure numbers, rather than percentages, which naturally increased over the years as the enrolment increased. However, it does not seem that the percentage of failures has increased over the years.

Employment of Graduates

With regard to graduate employment, it would seem that most institutions do not have a proper mechanism to monitor the employment situation of their graduates. This was specifically mentioned by University of Ouagadougou.

The University of Nairobi reported that although its graduates used to get jobs immediately after graduating, currently they were taking much longer to be employed, and that underemployment of the graduates had been on the increase. This is because job opportunities are fewer as a result of the downfall of the economy over the past 15 years and also because

of the mismatch between the nature of university education dispensed and the job market requirements.

The National University of Science and Technology reported that its graduates were increasingly becoming entrepreneurs rather than job-seekers. In the 1990's about 10% of the graduates became entrepreneurs of one kind or another, and this figure has increased to 30% at present, with only about 30% of the graduates finding suitable employment in the country. What is not clear is whether the institution is training the students to become entrepreneurs or whether the graduates are resorting to entrepreneurship because they are unable to find suitable employment. The disturbing information from the National University of Science and Technology is that about 20% of the graduates were finding employment in other countries, mainly in the Southern African region, indicating that there is brain drain from the country even at the level of fresh university graduates. The remaining 20% of the graduates proceed to postgraduate studies either in or outside Zimbabwe.

5.5 Physical Infrastructure

Because of shortage of public funds for expansion, the physical infrastructure at almost all the institutions has not increased proportionately with the increased enrolment. At University of Edouardo Mondlane, for example, from 1986 to 2006 the student population increased by nearly nine-fold, yet the physical facilities expanded by a mere 67%. Similarly, at University of Nairobi the student population increased by nearly 26,000 from 1986 to 2006, but the additional physical space, either acquired from other institutions or constructed, was about 52,000m² or only about 2 m² per student. The available lecture halls, residential halls and offices are no longer able to accommodate the new and expanding academic programmes. Several capital development projects were initiated over the past decade but because of lack of government funding they had to be stalled.

Insufficient physical facilities, compounded by lack of maintenance, have resulted in all the universities experiencing a degradation of their physical infrastructure as a result of massification. University of Cheikh Anta Diop reported that there had been a progressive deterioration of its lecture rooms and theatres, laboratories, library, and administrative buildings. Photocopying machines were constantly breaking down from over-use, the ventilation and sound system in the lecture rooms were defective, toilets were almost non-functional, etc. This was not only due to non-availability of financial resources but equally to a lack of a proper institutional management policy with regard to repair and maintenance.

The University of Ghana also reported on the great strain on its infrastructure as a result of massification. It mentioned the fact that massification had led to unsanitary conditions and habits, with students abusing the sanitary facilities or using the bushy areas on campus as toilets. It particularly highlighted the deleterious effects of increased enrolment on utilities such as water, electricity and sewerage disposal. The amount of water available for the current student and staff on campus was only 14 litres per person per day, which was grossly insufficient. A recent load monitoring exercise carried out by the Electricity Company of Ghana, which supplies the university's electricity through two feeder stations, showed that the university's sub-stations were seriously overloaded which could have serious safety consequences. And the sewerage system was not functioning as the existing trickling filters were designed to cater for a population of 11,400, not over 30,000.

The National University of Science and Technology has insufficient sports facilities on campus and the students have to be transported by bus to the other sporting facilities in the city, incurring additional expenses for the university and loss of time for the students.

Nevertheless, in spite of many constraints, every institution has made considerable efforts in expanding its infrastructure, as will be described later.

5.6 Students' Residences

All the universities participating in this study were created as residential institutions, designed to accommodate the majority of their students. However, it has been impossible for them to cater for the huge increase in student population and this has had dramatic consequences on the quality of life of the students in many of the institutions. The proportion of students enrolled who are provided accommodation in the university residences in the institutions in 2006 is shown in Table 5.2.

The University of Ghana, for example, had rooms for 1,057 students at the time of its creation in 1960. This was increased to 1,731 in 1970 and 2,081 in 2004, which is still the state in 2006. Only 30% of the student population now has access to accommodation on campus, in spite of the fact that students are put, officially, five to a room which was originally meant for single occupancy or double occupancy in some cases. At one time science students were entitled to campus accommodation to enable them to stay late to complete their laboratory practical work; this preferential treatment was subsequently discontinued. As a result of the overcrowding, students are unable to work in their rooms. A number of reading rooms have been created in the Halls but they are not adequate. Students often have to work in the corridors of departments or under trees and, at night, even under car ports where there is light.

At the University of Eduardo Mondlane there were 4 hostels providing 450 beds for the students in 1986. In 2006, there were 7 hostels with 1,080 beds. There is a clear university policy to provide accommodation to all students emanating from rural areas, and students from Maputo, the capital city where the university is located, are not entitled to rooms in the student hostels. But with an enrolment of about 14,000 students, implementing such a policy has become almost impossible.

Kenyatta University's student residences have just over 6,000 beds which can cater for about 45% of the students requiring accommodation. At University of Ouagadougou there are 1,793 beds in its residences, which cover only 7.5% of the enrolled students. The situation is even worse in the student residences at the National University of Science and Technology which have only 152 beds and can therefore accommodate only 3% of the student population. The university has converted a block of flats in the city centre into a students' hostel which has brought some relief to the huge accommodation problem. The majority of the students have to seek accommodation elsewhere.

Fig. 3.2 shows the situation at the University of Nairobi over the period 1986 to 2006, which clearly shows that the growth in student population has outweighed the available accommodation facilities. In 2006/07, the university can provide accommodation to only about 37% of its undergraduate enrolment. However, priority of room allocation is given to government-sponsored students who represent about 40% of the total undergraduate enrolment. Nevertheless, the university is under continuous pressure to allocate rooms to self-sponsored students as well. It has therefore resorted to accommodating 3 or 4 students in a room designed for two by introducing double-decked beds in the rooms. This has resulted in

many inconveniences to the residents, including gross overuse of bathrooms. Many students also stay illegally with their family or friends who have secured rooms, and sub-letting of

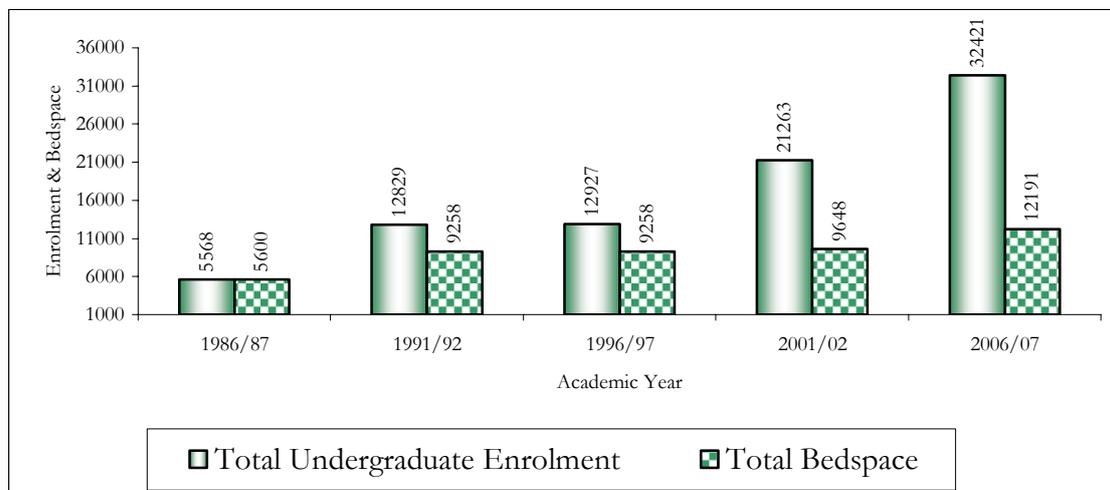


Fig. 5.2: Undergraduate Enrolment and Bed Space at University of Nairobi

rooms by students is a known and common practice. Because of the high cost of food, many students resort to cooking in their rooms. All these practices result in high electricity and water bills for the university, poor state of hygiene and increased risk of fire in the halls.

Similar conditions prevail at the University of Cheikh Anta Diop except that the situation there is much worse. For a student population of nearly 60,000 the total number of beds available is 5,136. But most of the rooms are used for many more students than there are beds, some rooms accommodating, illegally, up to 7 students. There are two main student residences (known as ‘campus social’), one at the north for male students and the other at the south for female students. Sub-letting of rooms to those who come from the rural areas or who are repeating a year is common. The residential quarters have become teeming areas where all sorts of people, in addition to the students, live and meet – beggars, ruffians, the mentally sick, prostitutes, street pedlars etc. These people eat, sleep, wash, pray or meet for social, religious, cultural and political activities in restricted and grossly inadequate premises. The buildings, sanitary facilities and hygienic conditions have degraded considerably.

At University of Ouagadougou, the large number of students has resulted in violence by the students towards not only other students but also teaching and administrative staff. Such violence, which has caused injury and property damage, has necessitated the university to resort to private security services to reinforce the institution’s own security personnel.

What transpires from the foregoing is that providing adequate and suitable accommodation to the students in all the institutions is one of the greatest challenges posed by massification.

5.7 Government Funding

While government in all cases increased its funding to the institutions, that increase, in real terms, has not always been sufficient to cater for the effects of institutional massification. Most of the institutions gave an indication of their recurrent budget and the proportion of government funding could be calculated. But what could not be ascertained from the

information supplied was whether the funds available were sufficient or not. Many African universities have learnt to make do with what they have and very likely the same philosophy governed several of the institutions surveyed in this report. One could argue that no amount of funds to a university would be ever sufficient. That may be true but the corollary that a university needs a minimum of funding to be able to effectively fulfil its mission of teaching and research is equally true.

The proportion of government's grant in the institution's budget varies from one institution to another, and has also changed over the years. At University of Nairobi, for example, in 1986/87 the government grant exceeded the institution's budget. Over the years, as the enrolment increased, the proportion of government funding gradually declined and, in 2005/2006, the grant covered only 55.5% of the university's budget. A similar situation prevails at Kenyatta University and in fact that institution already predicts a further and drastic decline in government funding. In its Strategic and Vision Plan, Kenyatta University makes provision for no more than 31% of its budget from government sources.

The financial situation at University of Ghana is interesting as in recent years government's contribution has increased: from 39% of the budget in 2004 to 62% in 2006. At University of Edouardo Mondlane, too, government's contribution to the budget increased from 52% in 2001 to 57% in 2006, the remaining funding coming from foreign aid, loans taken and income generated by the institution itself.

At the National University of Science and Technology the government remains the main source of funding, providing 88% of the institution's budget in 2007, with tuition fees representing no more than 3% of the university's budget. Similarly, at University Cheikh Anta Diop government provided 93% of its financial requirements in 2006. No information was provided by University of Ouagadougou but there, too, government must be the principal source of income.

There thus appears to be no clear-cut trend with regard to funds provided by government to the institutions to cater for the effects of massification.

CHAPTER 6: INNOVATIVE APPROACHES TO ADDRESS MASSIFICATION

6.1 Introduction

This chapter reports on the innovative approaches used by the institutions to address the challenges posed by massification. All the information provided comes directly from the Institutional Reports of the seven participating institutions.

In the Guidelines provided the institutions were asked to report on innovations in six main areas, namely teaching, examination performance, physical facilities, research, institutional management and governance, and quality of life of students. No definition of ‘innovation’ was provided to the institutions, partly because innovation is not an easy concept to define and it was felt that it would be best to leave each institution to interpret the term as it thought fit.

In higher education, the word innovation is often used interchangeably with reform, although according to Altbach (1982), reform usually applies to a major change in structure whereas innovation refers to a small alteration. From the point of view of that definition, several of the institutions reported both reforms and innovations and they have all been considered as innovations. The definition proposed in the WGHE publication on higher education innovations in Sub-Saharan Africa (WGHE, 2004) is as follows: ‘The planned implementation or application of new ideas, practices and services which arise through creativity, interaction and insight, with the aim of improving an existing situation, practice or service, and thereby bring about change. Innovation can arise from initiatives at the individual, institutional or systemic levels, and in response to external factors’. This is a far broader and all-encompassing definition and is the one that has been adopted in this report.

Every institution did not report on innovative practices in all the areas, nor was this expected. In the light of responses received, the innovations, as given below, have been grouped into slightly different areas than the ones originally proposed to the institutions in the Guidelines. Under financing, for example, the institutions emphasised on their income generation activities and this has therefore been taken as a main area. The use of ICT also emerged as a major area for innovations. Under examination performance, the few innovations reported concentrated mainly on the use of technology to facilitate the examination procedures and these have therefore been reported under use of ICT.

This chapter is not meant to provide an inventory of all the innovations reported but rather to give an overall picture of innovations in the institutions. The detailed innovations as reported by the institutions can be found in their respective Institutional Report. Finally, a couple of institutions reported on their future plans as innovations, but these have not been retained.

6.2 Approaches to Teaching Increased Numbers

Splitting Classes

All the universities have had to find new approaches and strategies to cope with the increased enrolment, ranging from the simple to the complex. The simplest approach has been to split the very large classes into smaller groups, although this entails additional teaching. At University of Ghana the principle of splitting classes has been adopted but only one or two Departments have been implementing it because of lack of staff. At University of Nairobi, also, classes are split into smaller and more manageable groups in some Departments but,

although this helps to increase teacher-student interaction, it is not always possible to find sufficient lecture rooms. At University Cheikh Anta Diop as well, because of huge numbers of students who cannot be seated in the existing lecture theatres for face-to-face lectures, splitting of classes takes place.

At University Edouardo Mondlane the splitting of classes is used mainly in practical-oriented subjects and in those subjects which are common to two or more programmes. The theoretical aspect of the subject is then taught in large classes, usually by senior academic staff and, for the practical aspect (tutorials, laboratory sessions, fieldwork), the class is split into smaller groups which are handled by junior staff.

In order to meet the requirements of additional teaching, in almost all the institutions part-time lecturers are employed and full-time staff are paid for the extra hours that they agree to teach. In many cases the same lecturer delivers the same lecture to several split groups.

Modularisation of Courses

A major reform at University of Ouagadougou has been the adoption of the modular system in 2000. Each programme now consists of several modules, each carrying a determined number of credits. Students complete and compile modules as they progress in their courses. As a result of this reform, the university reports that the success rate has increased from 30% previously to 55% after its introduction. Modularisation has been accompanied by splitting the academic year into two semesters. This has reduced the burden on staff of marking very large numbers of examination scripts at the end of a year. Staff also have the flexibility of deciding on the modules to be taught in each semester. This reform at University of Ouagadougou forms part of the LMD reform (License, Maitrise, Doctorat) which many Francophone African universities are implementing in line with similar reforms in Europe under the Bologna Process.

The University Cheikh Anta Diop has also embarked on the LMD reform.

In the Anglophone universities and at the University Edouardo Mondlane, modularisation of courses and the use of semesters have been in use for quite some time.

6.3. Strategies for Increasing Enrolment

Running of Parallel Programmes

The universities surveyed are all conscious of the need to increase enrolment, in spite of the problem of massification and funding they are facing, and several of them have embarked on running programmes in parallel to their normal ones. The idea is to give a chance to those qualified students who have not been admitted to the universities using the normal selection criteria and, in all cases, these students are charged full tuition fees.

At University of Nairobi, which refers to such programmes as ‘self-sponsored’ since the tuition fees charged cover the cost of running the programmes, the effect has been dramatic on the institution. All the six Colleges of the university, at both undergraduate and postgraduate levels, run such programmes which were initiated in 1997/98 and which are run essentially in the evenings from 17.30 to 20.20 and on weekends. In fact, the number of students enrolled on self-sponsored programmes now exceeds those on regular, government-sponsored programmes and, at undergraduate level, self-sponsored students represent 61% of total enrolment.

Kenya University also introduced the concept of self-sponsored students, along similar lines as the University of Nairobi, to increase its enrolment. In 2007 the self-sponsored students represented 55% of total enrolment.

At the National University of Science and Technology the programmes are known as 'parallel programmes' and are again run in the evenings and during weekends. The curriculum, lecturers, teaching and assessment methods are the same as for regular programmes. At present five Faculties offer 9 parallel degree programmes with a current enrolment of nearly 1,000 students, representing 18% of its total enrolment. Academic staff members and instructors are paid for the hours taught on parallel programmes. The university has, however, noticed that the performance of parallel programme students is inferior to conventional ones, partly because of staff shortage and partly because the former have limited exposure to the university's resources such as library, laboratories, etc. The university is, therefore, considering the possibility of establishing a semi-autonomous parallel school with a separate complement of teaching staff.

The National University of Science and Technology also runs 'Block Release Programmes'. These are meant to upgrade the skills of workers and are tailor-made to suit the requirements of particular working professionals. Learners undertake a crash programme of teaching and learning during a prescribed block session. The objective is to accommodate all the teaching that would otherwise be done in one term or semester into one or two block sessions. Eight degree, diploma and postgraduate block release programmes are currently run in two Faculties with a total enrolment of about 390 students. The university has created a Centre for Continuous Education (CCE) to manage the day-to-day running of both the parallel and block release programmes. The CCE also runs a number of short professional development programmes at the request of industry and business.

At University Eduardo Mondlane full degree programmes specifically designed to be run in the evenings are offered and they are referred to as 'post-labour' (meaning 'after work'). In 2006 four Faculties, namely Law, Economics, Arts & Social Sciences, and Sciences were offering 14 'post-labour' undergraduate programmes, with an enrolment of 2,263 students, representing 16% of total enrolment. The fees charged are relatively higher than for normal programmes as they are more dependent on part-time lecturers.

Open and Distance Learning

Kenya University has made some remarkable progress in the use of Open Learning for increasing enrolment. It has created an Institute for Open Learning (IOL) with Open Learning Centres in different parts of the country and its plan is to convert 60% of these Centres into Satellite Campuses to offer teaching and learning programmes in diverse modes. Its basic approach is to distribute printed modules to students, which are then supplemented by face-to-face tutorials, radio and TV broadcast, communication through internet, etc. It has now opened a Radio Station of its own to facilitate transmission of information. There are about 5,600 students registered with the IOL, representing 26% of the institution's total enrolment.

The University of Ghana is also resorting to Distance Education to cater for those qualified students it cannot admit. A Centre for Distance Education was established in 1994 but it is only now that it has started playing an active role. A number of Distance Education programmes will be launched in 2007/08.

The University Edouardo Mondlane also recently created a Centre for Distance Learning (CEND) to reach out to those seeking higher education throughout the country. In collaboration with a partner institution in South Africa, the CEND launched a pilot Distance Education programme in Management. If there is a positive appraisal of the pilot programme, the university may decide to opt for a wider use of Distance Education.

University Cheikh Anta Diop is considering embarking on the use of Distance Education to cope with the massification problem. However, it is still at the stage of examining the various implications - legal, pedagogical and administrative – of such a mode of learning

6.4 Income Generation

At the University of Nairobi the introduction of self-sponsored programmes had the clear objective of generating additional income, apart from increasing enrolment, and that objective has been achieved. In less than a decade these programmes have been instrumental in turning around the institution's financial status. In 1986/87, self-generated income at the university represented a mere 5% of its budget; in 2005/06 this was no less than 40%, and the revenue from self-sponsored programmes constituted the bulk of it. To a lesser extent income was also generated from the following activities: research and consultancy, funeral services, food processing, irrigation schemes, equipment fabrication in workshops, bookshop and university printing press, etc.

The proportion of the revenue from self-sponsored programmes in the budget of Kenyatta University was not mentioned but it must be of the same order as that for University of Nairobi. Kenyatta University has created an Endowment and Trust Fund, consolidated from contributions and donations from philanthropists and well-wishers. It also generates some income through renting and hiring out its facilities and other user services.

At University of Ghana, because of the increase in government grant in recent years, the internally generated income, which represented 61% of the budget in 2004, now stands at 38% in 2006. The bulk of this income comes from full tuition and residential fees from foreign students, full fee paying courses such as the LLB and the Executive MBA, subsidised tuition fees paid by the Ghanaian students under the Academic Facility User Fees scheme introduced in 1996 to overcome the shortage of funds, and subsidised residential fees, again paid by Ghanaian students under the Residential Facility User Fees scheme. University of Ghana has also introduced a new concept of charging full tuition fees to a small number of students (not more than about 5% of total enrolment) applying for its humanities and science programmes. These students are then admitted without having to compete with non fee-paying students.

Income generation has been fairly modest at University Edouardo Mondlane. In 2001 it represented 10% of the institution's budget and this increased to 15% in 2006. The main sources of income are 'post-labour' and postgraduate programmes fees, the veterinary hospital, the animal farm, the museums and the centre for engineering studies. About five years ago University Edouardo Mondlane created a University Foundation to increase income mainly from the university press.

At the National University of Science and Technology the charging of fees for parallel programmes bring in income, which represented, in 2006, about 6% of the institution's budget. Income was also generated through the running of a series of short-duration

professional development programmes. The recent setting up of 'The Technopark', a strategic business unit, is believed to have the potential of generating a significant amount of revenue through the transformation of patents into business ventures. Several small business ventures are already in operation and a major one, following the patenting of manufacturing aluminium sulphate, is in the offing.

University Cheikh Anta Diop has not been able to generate much of its own income, which has been of the order of 6% of the institution's budget over the years, derived mainly from the students' registration fees. However, it is currently in the process of creating an Alumni Foundation with a view to soliciting the support of its alumni towards the institution. A website has accordingly been prepared. The plan is to identify some 5,000 potential donors who each could then contribute 100,000 FCFA (about US\$ 200), thus raising a sum of 500 million FCFA (US\$ 1 million). It is proposed that 50% of the funds collected would be attributed to research.

6.5 Physical Infrastructure

To accommodate the increased enrolment, the institutions have had to increase their physical infrastructure. They have adopted several strategies, namely decentralising or delocalising their activities from the main campus, expanding or putting up new buildings on the campus wherever possible and, to a much lesser extent, renting of premises.

University of Ghana

The main campus of University of Ghana is situated in Legon, off the city centre of Accra, but it operates a second campus in Accra, which was formerly the Accra Workers College run by the Institute of Adult Education. To decongest the population on the main campus, the university moved various Diploma courses to the Accra campus. The courses are run mostly at weekends and this has created both residential and classroom space on the main campus for degree students. The Accra campus has now been reorganized with a Principal and also admits degree students.

University of Ghana's College of Health Sciences operates a teaching hospital about 20 km from the main campus. A number of other Institutes and Schools also run facilities off campus. The Institute of Adult education, for example, runs centres in every region of the country while the College of Agriculture and Consumer Sciences has three research centres located off campus. . At the same time, since 2000, the university embarked on a wide range of infrastructural development on its main campus, such as the construction of multi-purpose lecture halls, libraries, science laboratories, sports facilities as well as staff residences

National University of Science and Technology

The National University of science and Technology started as a single office block in the city of Bulawayo and, as its student population grew, it acquired physical facilities in different parts of the city. Its library and its Centre for Continuing Education are located in buildings in the city centre; its Faculty of Medicine has teaching space and laboratories at one of the local hospitals; and its Department of student Affairs has converted a city block of flats into students' hostels and also runs a students' health facility in the city centre. An interesting innovation at the university is the contribution of the private sector in its infrastructural development. The Delta Corporation, a giant beer and beverage manufacturer, provided funds for the construction of a lecture theatre which was then named after the corporation.

University of Ouagadougou

At University of Ouagadougou a large number of buildings, comprising lecture theatres, classrooms, laboratories, office blocks, etc., have been put up since 1993/94, in some cases with funding from foreign countries or external funding agencies. The construction of new buildings is continuing. In the meantime, the university hired the premises of the Salon International de l'Artisanat de Ouagadougou (SIAO) to run its courses.

Government, realising that the university cannot accommodate the increasing number of applicants for admission, started a strategy of delocalisation of higher education. In 1997/98 a new university at Bobo-Dioulasso was created followed by another one at Kandougou in 2004/05. There are plans to create two other universities in different parts of the country to ease the pressure on University of Ouagadougou. Also, it is proposed to delocalise the Institut Burkinabé des Arts et des Métiers (IBAM, the Institute of Arts and Trades) of the university to another part of the country.

University of Cheikh Anta Diop

A similar approach of delocalisation is being adopted in Senegal to reduce the pressure of admission on University Cheikh Anta Diop and to reduce the flow of students from rural areas to the city of Dakar. In 2007, two new universities were created at Thies and Ziguinchor, and a Regional University Centre at Bambey. At the same time, again to increase access to higher education but reduce the pressure on existing public universities, the government is encouraging the setting up of private higher education institutions. Over the past eight years five such institutions have been created.

Because of shortage of space the University Cheikh Anta Diop has approached schools and other institutions in the vicinity to rent space when the premises are not in use. In recent years the university has also embarked, with government funding and the assistance of foreign countries and funding agencies, on the construction of a series of lecture theatres, classrooms, workshops, etc. A noteworthy development is the creation of UCAD 2, a new, modern extension of the university located within the university campus. It was inaugurated in 2004 and was built with the assistance of World Bank funding as part of the reform process of University Cheikh Anta Diop. The main components of the complex are a video-conferencing room with a seating capacity of 32, an auditorium of 1200 seats (both connected so that the audience in the auditorium can see the presentation and discussion in the video-conferencing room), and a multi-media room with 50 computers linked to internet. The complex also comprises a number of lecture and seminar rooms and offices and a restaurant for participants attending a conference. UCAD 2 has significantly contributed to reducing the pressures of massification and modernizing the campus.

Kenyatta University

In addition to its main campus located on the outskirts of Nairobi, Kenyatta University has two other campuses. It is also developing a couple of new campuses to teach disciplines such as Law and Medicine. In the latter case, with the assistance of the Japanese government, a University Teaching Hospital is being set up. But the real delocalisation of KU has taken place through its open learning activity, which has also been the main thrust for its increased student enrolment. Kenyatta University has eight Open Learning Centres situated all over Kenya, at least one in each province, to support the students enrolled on its open learning programmes. The future plan is to convert a number of these centres into satellite campuses. At the same time renovation of existing buildings and construction of new ones have been ongoing on the main campus. For example, the former Kenya Education Staff Institute

(KESI) has been converted into the Kenyatta University Conference Centre, and a new computer laboratory complex is being built.

University of Edouardo Mondlane

The University Edouardo Mondlane is very much delocalised. Its Faculties, schools and services are scattered throughout the city of Maputo and some are even located in other regions/provinces of the country. For example, the Faculties of Law, Architecture, Medicine and Veterinary Sciences have their own independent campuses; the central administration of the university, including the Rector's office and the Registry, is located in a building in the city centre; five of the seven students' hostels are located in different parts of Maputo; and its newly established School of Maritime and Coastal Sciences is located about 1,400 km from Maputo.

University Edouardo Mondlane has also expanded its physical facilities in recent years. Of special relevance is the construction, at the main campus in Maputo, of a new building for the Faculty of Science, a 'Common Space Campus' and a 'Pedagogical Complex' comprising classrooms and lecture halls, and a Central Library, all financed partly by the government and partly through loans from the World Bank and BADEA. A new policy adopted by the university is that all the facilities in the 'Common Space Complex', the 'Pedagogical Complex' as well as several lecture rooms in the various Faculties is administered by a special unit for the common use of the whole university, thus enabling an optimum use of the resources to cope with the increasing number of students.

University of Nairobi

The University of Nairobi is also a much delocalised university. Although its main campus is situated near the city centre of Nairobi, it has six other campuses at distances varying from 2 to 24 km from the main campus. In 2006 the university created, with its own funds, a new campus in Kisumu in the western region of Kenya in order to meet the demand for higher education in that part of Kenya and to avoid the rush to Nairobi. In 2007, following a presidential decree, the university acquired two constituent colleges which will provide additional physical facilities. The university also received the donation of a building which formerly housed the International Centre for Insect Physiology and Entomology (ICIPE) in Nairobi, which it converted into its Centre for Biotechnology and Bioinformatics. In addition, the university is also in the process of constructing a modern examination centre at its Chiromo campus to serve the needs of several of its nearby campuses. The university also tried to rent space for teaching and examination from a couple of institutions in the city of Nairobi, but this has not proved to be sustainable because of high rents.

6.6 Use of ICT

ICT can be a powerful tool for coping with massification. All the institutions surveyed have used ICT in different ways to overcome their problems.

One interesting approach is the inter-connection of several lecture rooms so that a lecture delivered in one can be simultaneously transmitted in the others by video-transmission. This solves the problem of a lecturer having to deliver the same lecture to different groups. This is being implemented by University Cheikh Anta Diop in its new infrastructure at UCAD 2. Similarly, at University of Ghana, multidisciplinary laboratories have been equipped to enable lectures of different courses to be given in one laboratory and to be projected in the others. Video-conferencing techniques facilitate live interaction between the laboratories. University of Ghana also uses LCD projection of live practicals through close-circuit television so that

practicals can be watched by a much larger group of students. At University of Ouagadougou, too, plans to connect a series of existing lecture theatres to enable simultaneous transmission of lectures have reached an advanced stage.

ICT can also be very useful in processing examinations. Because of the very large cohorts of students, in the Faculty of Science at University of Ghana an interim assessment of the students is carried out twice in a semester through a multiple-choice type of test using the Learning Management System software. The same software has also been used to give students access to lecture notes. University Cheikh Anta Diop also resorts to using ICT for automatic management of examination or coursework marks of students, especially in Faculties with very large numbers of students such as its Faculty of Letters and Humanities. This facilitates the task of both the lecturers, who have rapid access to the results which can then be quickly distributed to all staff concerned, and the students who obtain their results quickly and do not have to queue up outside the lecturer's office. At University Edouardo Mondlane an optical reader is used to mark multiple-choice questions of the large number of admission examination scripts.

University Cheikh Anta Diop uses an interesting way of optimally planning the use of its lecture rooms. Since 2002, it has been using the Corbett Engineering Ltd. Computer Assisted Timetabling (CELCAT) software which uses five sets of data – lecturers, subjects, lecture rooms, student groups and students – to plan the timetabling of lectures so as to avoid clashes. This has enabled the university to efficiently manage its limited human and physical resources. The university plans to extend this software to cover administrative tasks such as registration of students, management of exams, online courses, etc.

The use of ICT in learning is another effective way of alleviating the problems associated with massification. University Cheikh Anta Diop uses ICT innovatively in two ways. First, through the creation of an online database of resources, including lecture notes, which is linked to other resources, for use by students for a particular subject, as for example in the case of its Department of History and Department of Physics. Second, it uses e-learning to complement face-to-face learning.

The Department of Extra-Mural Studies of the University of Nairobi, which has to teach large groups of students in all its regional centres, has developed e-learning materials for Diploma courses, which are posted on the university website. Some of these materials are in audio-visual form and are downloaded through multimedia facilities. The mode is used to offer business-related studies and, currently, over 300 students are enrolled in the programme. Also posted on the internet are teaching notes and other materials.

The National University of Science and Technology has made a slow beginning into online learning, essentially to complement its postgraduate block release programmes, such as the executive MBA, meant for executives who have easy access to computers. The Department of Computer Science and the Department of Sports Science and Coaching have also made use of computer-based training for tutorials, quiz simulation or games. The university is a bona fide host open courseware of the Massachusetts Institute of Technology (MIT), USA, giving access to academic staff of MIT lecture materials, assignments, tests, etc. In order to promote wider use of online learning, in 2007/08 the university plans to train a selected group of lecturers on how to develop and teach online courses.

Kenyatta University runs several programmes of the African Virtual University (AVU). It has set up the Kenyatta University e-Learning/AVU (KueL/AVU) centre which offers

computer and business management related programmes using interactive and online learning.

Most of the institutions have started using ICT to facilitate their administrative work. University of Nairobi, for example, has computerized all its administrative units at all levels to improve the efficiency of processes such as admission of students, registration for programmes and examinations. Now, all Faculties generate transcripts and other student data using ICT systems with software packages such as Students Information Management System (SIMS). Kenyatta University, too, has computerised its student admission, registration and examination records which are all networked, thus providing quick and reliable information. Also, in 2003, the University of Nairobi computerised the operations of its Student Welfare Authority (SWA) which significantly improved the efficiency of the SWA in such matters as allocation of rooms in the residences, monitoring of expenditure, accessing past records, etc. The use of technology has also enabled the SWA to improve revenue collection by about 85%, as well to make more efficient use of the funds collected.

ICT also greatly helps in automating library services. The University of Nairobi library is using the *VubisSmart* software to convert manual catalogues into an electronic database, including all the theses available at the main library, which is accessible through the internet. Another on-going project at the University of Nairobi is the Electronic Supply of Academic Publications (eSAP) Project, which works closely with the International Network for the Availability of Scientific Publications (INASP). The project aims at promoting electronic publishing among participating universities, enhancing exchange of research information, and promoting access to international scientific journals through the internet.

Finally, an interesting innovation at Kenyatta University is that it has set up and operates its own cyber-café on campus.

6.7 Research

Research is an important activity of any university and most of the institutions are making a concerted attempt to keep research active in an environment grossly dominated by teaching. A couple of them, however, mentioned that lack of funds was a serious constraint.

An interesting activity at University of Ghana is the creation of the annual Faculty Colloquium which gives teaching staff, post-graduate and final year students an opportunity to present their research results to the scientific community. The Colloquium stimulates research in the Faculty and the publication of the Proceedings of Faculty Colloquium contributes in some ways to the promotion of publications in the Faculty. The idea of the Colloquium started in the Faculty of Science in 1987 but is now also held in the Faculties of Humanities and Social Studies. Funding of research at the university used to be mainly from the university's Research and Conference Committee but since the 1980s there was hardly any funding available. The situation has now changed and, since 2005, research funds are available through the Ghana Education Trust Fund, which will undoubtedly encourage research.

The National University of Science and Technology has a Research Board, chaired by the Pro-Vice Chancellor for Academic Affairs, Research and Consultancy which allocates research grants to staff. There is now a new and deliberate policy to promote research at the university, as evidenced by the fact that the budget allocation to the Research Board has increased from 4% of the university's budget in 2005 to 9% in 2006. The institution recently

created the position of Director for Research and Innovation. Research seminars for academic staff are held, linking them to possible funding agencies and information data banks such as the Research-Africa.net. The institution has undertaken several externally funded research projects and a couple of major consultancies in recent years.

At University of Ouagadougou, in order to encourage research, a financial incentive is given to each academic staff who can show, in an annual report submitted to management, that s/he has been undertaking research activities during the year. The financial incentive has been doubled since 2006/07. The university has two journals for the publication of research papers of academic staff. Also, to encourage the supervision of postgraduate research, academic staff are allowed between 10-25 hours per supervised postgraduate student, depending on whether the student is preparing a Master's or Doctoral thesis.

At University Edouardo Mondlane, until about a decade ago, most of the research was undertaken by academic staff reading for higher degrees under the supervision of foreign scholars as part of their training. They were thus involved in individual research projects. Subsequently, the university established thematic research programmes of an interdisciplinary nature, encouraging the interaction of researchers from different departments to study some of the major developmental problems facing the country. In 2007 there were some 50 lecturers/researchers undertaking research leading to either a Master's or PhD degree under those research programmes. Those staff who prefer to undertake small research projects outside the established programmes can do so under the 'Open Fund for Research' which, currently, finances some 50 lecturers/researchers. Research at University of Edouardo Mondlane is financed almost entirely by foreign donors, including governments, agencies and foundations, the most important one being the Swedish SIDA/SAREC, and the funding has been fairly generous. The university's governing body has recently given a further boost to research by approving a research policy and implementation strategy.

In order to revive research at the University of Nairobi, a Research Policy Committee was set up in 2006 to propose clear policy and guidelines for research, especially with regard to Intellectual Property Rights of research. An effort is also being made to revive and strengthen the local research journals.

6.8 Staff Training

With teaching assuming an increasing importance, several of the institutions realised that it was important to train staff in pedagogical and other skills, especially as they have to deal with large cohorts of students. For example Kenyatta University, in 2004, created a Centre for University Pedagogy to train teachers how to deal with large groups of students.

The first pedagogical training for staff at the University of Nairobi was held in 1991, sponsored by German bilateral agencies. It was targeted for staff of the College of Education and External Studies (CEES). In 2005, a new round of training was started, this time sponsored by the university itself and developed and facilitated by lecturers from CEES. The training, whose primary objective is to improve the teaching skills of lecturers, also covers aspects related to improving the quality of service to the students, such as setting, administering and marking examination papers. The three-day training targets both permanent and contracted academic staff in all the university's colleges and, to date, about 800 lecturers have been trained and another 450 are lined up for training. The university is planning to make the training a continuous programme to cater for new members of staff.

At the National University of Science and Technology, because of shortage of academic staff, increasing use is made of teaching assistants who have limited teaching experience. Regular refresher courses on teaching, conducting tutorials, quality assessment, measurement and evaluation have been organised for them at least three times a year. The training, ranging from two-day workshops to 5 day seminars, essentially during vacations, is organised by the Department of Technical Teacher Education which also serves as the Unit of Teaching and Learning. Although preference to this training is given to teaching assistants, it is also available to other academic staff. The university has extended the training into a programme leading to a Postgraduate Diploma in Higher Education, which is being run on a block-release basis. Although the first intake has been largely drawn from the university's teaching personnel, the programme is open to lecturers from other tertiary institutions. The university also runs short staff training programmes for its administrative and technical personnel.

At University Edouardo Mondlane all Mozambican lecturers are required to undergo training in teaching skills. The training was introduced in 1989 through a long-term collaborative project with a Dutch university, financed by the Dutch government. Since 2002, when that project came to its end, pedagogical training of the university's academic staff has been handled by the Centre for Academic Development, which is a unit within the Faculty of Education. Apart from Teaching Methods, which is the 'core' course and includes techniques of handling large classes, other courses offered by that centre are: Students Assessment, Conducting Laboratory Sessions, Curriculum Development and Materials Development. Attending at least one of these courses, essentially the 'Teaching Methods' one, has been a compulsory prerequisite for the promotion of full-time junior lecturers.

6.9 Institutional Management and Governance

A massive increase in student numbers inevitably puts pressure on the management and governance of a university. A few of the institutions reported on management changes made recently, although it is not always clear whether all the reported changes are a direct consequence of massification.

At University of Nairobi, central authority, responsibility and accountability have been devolved to lower levels, the lowest being the academic department. The departmental chair, in addition to being responsible for the management of the staff, resources and students of the department, holds expenditure votes. The largest academic unit is the College, which coordinates the activities of the faculties, institutes, centres and schools under its responsibility.

The University of Ghana has been slowly decentralizing its management in order to cope with expansion in programmes and student numbers. Deans of Faculties are no longer elected but apply for the job with a written vision statement and are selected after an interview by the university's Appointments Board. Management has been devolved to Deans and a major aspect of decentralisation is the expansion of Faculty administration. Each Faculty now has a Vice Dean to assist the Dean to run the Faculty. Each department has one of the academic staff acting as Examination Officer whose duty is to coordinate all examination activities in the department and liaises between the Department and the academic directorate.

Similarly, at University Edouardo Mondlane the post of a Vice-Rector has been created centrally, and that position has been replicated at the lower level of Faculties. Also, staff appraisal for both academic and support staff is being introduced.

Performance contracting is an innovative approach to management in Kenya, therefore applicable to both the university of Nairobi and Kenyatta University. The university signs a performance contract with the Ministry of Education at the close of the financial year. This requires the university to submit quarterly performance reports to the Ministry and other authorities. At University of Nairobi, for example, the contract lays down specific targets to be achieved, such as reduction of cost, increase in the proportion of students and staff accessing the electronic library resources, specified number of publications in refereed journals, and ensuring student discipline and a clean and neat environment. The university, in turn, puts all its Colleges on performance contracts to achieve the agreed targets.

Implementation of a service charter is another new approach at both the University of Nairobi and Kenyatta University. The charter outlines the services rendered and commits the staff to offer timely, quality service to the clientele, the latter being able to provide feedback on the level of service delivery. This move ensures prompt delivery of services to students and other cadres of clientele. At Kenyatta University attendance registers have been introduced in all departments and sections with a view to improving the service rendered.

A few other interesting management changes reported by the two Kenyan universities are:

- a) The institutionalisation of an annual staff performance appraisal at University of Nairobi. In 2006, a ceremony was held to award outstanding members of staff based on the new appraisal system.
- b) Kenyatta University is in the process of acquiring the ISO 9001:2000 certificate on Quality Management to enable the university to operate more efficiently.
- c) Kenyatta University has engaged professional service providers to improve the security on campus. Access to the university is regulated by the introduction of security car stickers and all vehicles entering and leaving the campus are recorded. A Safety at Work Policy has also been implemented.

Several of the universities reported on the development of their Strategic Plan to enable the institution to progress in a structured and measurable way. The Strategic Plan at University of Nairobi is for the period 2005-2010. The one at Kenyatta University covers the period 2005-2015 and is accompanied by a five-year Medium Term Plan and Budget Framework for the period 2006-2011. The University Edouardo Mondlane is in the process of preparing its second, consecutive Strategic Plan 2008-2012 after the first one covering the period 199-2003. University of Ouagadougou has also elaborated a five-year Strategic Plan for the period 2005-2009, which has been duly costed.

6.10 Quality Assurance

The Guidelines specifically asked the institutions to report on their internal quality assurance systems. The University of Ghana reported that it set up an internal quality assurance unit in 2006 to oversee teaching, research and examination activities at the university. University Edouardo Mondlane does not yet have an internal quality assurance system but is preparing for it, especially in view of the Ministry of Education's plan to put in place a national quality assurance system. The University of Ouagadougou also mentioned that it had no internal quality assurance system and went further to add that the notion of quality assurance is ignored. The University of Cheikh Anta Diop is in the process of implementing the LMD system which contains some notions of quality assurance but is in no way equivalent to the system as understood in Anglophone higher education institutions. Similarly, the University of Nairobi has undertaken several reforms related to best practices in management and

governance of students, which in some way are relevant to quality assurance. Kenyatta University has a Directorate of Quality Assurance but it reported that it has been constrained by its limited scope and lack of resources.

Quality assurance thus does not appear to be well-anchored and given a priority in the institutions. This is a matter for concern. It is true that the prime responsibility for ensuring quality of higher education in a country rests with the state and many African countries are now in the process of putting in place national quality assurance mechanisms. Nevertheless, it is incumbent on all higher education institutions to put in place an effective internal quality assurance system. This is the best way to ensure that quality of teaching and learning in the institution is not being adversely affected because of massification.

6.11 Students' Quality of Life

The students form the heart and the *raison-d'être* of any university and their welfare and well-being should be a primary concern of the institution. None of the institutions surveyed was designed to accommodate such large numbers of students and several of them reported initiatives taken in an attempt to mainly improve the quality of life of students, both in their residences and on campus, but also to ensure their satisfactory academic performance. For example, in order to improve the language use of students, the Language Centre of the University of Ghana introduced ancillary courses in language and study skills and academic writing, for all fresh students registered at the Faculties of Arts and Sciences.

What is interesting is that in a number of instances, the students themselves have taken the lead to improve their lot. At University of Ghana, for example, the students have taken the innovative initiative to start a radio station, known as "Radio Universe", to disseminate information and educate students and the general public on topical issues. Part of students' fees is allocated to the station. The radio station also provides extra curricular activities for the students who volunteer to work at the station as amateur journalists, researchers, presenters and announcers. The university management set up a management board, comprising both students and staff, to assist in the smooth running of the station.

Students' Residences

At University of Ghana significant efforts are being made to increase the residential facilities of students. Some of the existing halls of residence have been extended or modified to provide additional rooms and three new halls have been built since 2004. The involvement of the private sector in the provision of residences at University of Ghana is an innovative step. The university has given up part of its land for the development of private hostels. There are currently private property developers on this land putting up residences, a good number of which are already in use and others are to be completed in 2008, which will provide 3,276 beds. Twenty-four private hostels have also come up in the communities around the university. These are of various grades and offer different types of facilities, such as satellite television and shuttle buses to the campus. Their rental fees, however, are about 200% higher than those charged in university halls of residence and, therefore, the majority of the students still prefer to be accommodated in the latter, in spite of the overcrowding. The university now publishes the "Legon Shelter", a newsletter for staff and students to educate the university community on housing issues. Hostels advertise in the newsletter to attract students. The newsletter is also used as a means to sensitize the community on environmental issues.

At National University of Science and Technology, because of limited residential facilities on campus, the majority of students reside off campus. The Department of Student Affairs assists

students in the identification of suitable accommodation off campus and also negotiates suitable rentals on their behalf. One useful approach adopted by the Department has been to identify a block of flats or hostels and then to negotiate a package deal with the proprietors for a group of students to occupy the entire building.

The student's organisations at University of Ghana, namely the Junior Common Room (JCR) and the Students Representative Council (SRC), have adopted new roles to cope with the large numbers. They now use student dues to assist the halls of residence in improving residential facilities. Some have provided lights both for security and study and notice boards to keep information flow among students. They have also acquired water tanks to improve sanitation in the halls. The SRC has supported distressed students and is also providing chairs and tables to create space in open areas for student to study and for recreation. Both the JCR and the SRC also organize various educative seminars for students and are actively engaged in the fight against HIV/AIDS through seminars and peer counselling. The SRC Women Commission, for instance, has been at the forefront in addressing such gender issues as affirmative action for increased female enrolment.

At University of Nairobi, the Student Organisation of Nairobi University (SONU) has helped to improve common rooms in the halls of residence, to improve water supply and lighting and in the acquisition of a new ambulance for one of the Colleges.

Catering

Catering for large numbers of students always poses a problem. At University of Nairobi, the catering department has initiated a system whereby students can make pre-payment for meals and subsequently eat on account, thus relieving students of the cumbersome task of buying food in cash on a daily basis.

At University of Ghana, with the students' reluctance to eat in halls of residence, several new, private eating places have been allowed on campus over the past ten years. A hawkers' market was built in 2002 to sell both raw food items and cooked meals. Also, two privately owned supermarkets on campus have been inaugurated over the past five years.

At the National University of Science and Technology the policy of inviting tenders for the three different cafeteria available on campus has been introduced, and the tenders are awarded to three different caterers to encourage competition among them for the benefit of the students. The tenders are renewed every two years which ensures that the caterers strive to provide a good service both in terms of quality and quantity.

Transport

To facilitate the transportation of students to the campus, the Department of Student Affairs of the National University of Science and Technology has negotiated a package transportation deal for students with the Zimbabwe United Passenger Company, a government-owned bus company whose fares are subsidised by the government. The bus company assigns several buses for NUST students in the morning, in the afternoon and in the evening. At University of Ouagadougou, too, the university has obtained preferential bus rates for its students, with a single monthly rate covering unlimited travelling.

The Metro Mass Transport Company, Accra, used to convey non-residential students of the University of Ghana to strategic positions in town, from where they would connect to other forms of transport to the university or their homes. In 2005/2006 the student leadership negotiated with the company to extend its bus service up to the campus. The company also

later allocated two buses for transportation on campus. On its part, the university started a shuttle service with two 30-seater buses to and from areas with high concentration of private student hostels. Most of these hostels also own their own buses used to transport their students to and from the university. All these measures have adequately dealt with the transport need of the students at the University of Ghana.

Health and HIV/AIDS

At the University of Ghana, every newly-admitted student has to undergo a medical examination at the University hospital. Any student who flouts this requirement is prevented from taking the first semester examinations. It is believed that a strict enforcement of this practice has prevented any serious outbreak of infectious diseases in spite of the over-population in the halls of residence. The university also runs a counselling and guidance directorate, manned by professional counsellors who not only provide social counselling but also advise students on academic programmes that would be most appropriate for them.

At the National University of Science and Technology the Department of Students Affairs recently has established a Guidance and Counselling Unit manned by qualified counsellors to advise students on issues such as HIV/AIDS and employment. The university has also developed and adopted an institutional HIV/AIDS policy which will assist with issues such as discrimination of the infected and assistance to the affected.

Kenyatta University has established a dynamic AIDS Control Unit to coordinate and formulate programmes for the management of HIV/AIDS within the university and its neighbourhood. It has developed HIV/AIDS policy guidelines on the prevention, management and control of HIV/AIDS at the institution. The university offers a wide variety of programmes at certificate, diploma and postgraduate levels, including a compulsory core unit on HIV and drug abuse to all students; it also undertakes research on the topic. The AIDS Unit provides counselling services to all students and plays a key role in mobilising the surrounding communities.

In 2002, the University of Nairobi also established an AIDS Control unit which has facilitated the formulation of a comprehensive policy on HIV/AIDS to guide preventive and curative initiatives. Condoms are provided free at the University Health Services and students are encouraged to utilise the campus-based Voluntary Counselling Testing (VCT) facility. The institution's dynamic response to the HIV/AIDS pandemic has helped to improve the level of awareness, has promoted mainstreaming of HIV/AIDS activities by various students' group and has promoted sexual behaviour change among the student community.

Employment and Counselling Services

At the University of Nairobi, an Office of Special Students Advisor exists which provides advice, counsel and guidance to students who face academic, financial or social difficulties. The Office also helps to link students with charitable organisations, the university administration and the Higher Education Loans Board to enable them to access financial support. There is also an Office of Dean of Students which links students with industry for placements, internships and employment.

The National University of Science and Technology arranges for internship of its students in business and industry in the country. The large enrolment of students has meant a greater

demand for internship places. The university has therefore set up an Industrial Liaison Office (ILO) in its Technopark, which is well-connected to business and industrial enterprises, to assist faculties and departments in finding internship places for the students. Several students have also been placed in organisations in South Africa and Botswana and the university has engaged universities in those two countries to supervise the interns on its behalf.

In 2006, Kenyatta University created the Centre for Career Development and Attachment Programmes which administers programmes and provides services in career development for its prospective and continuing students, and its alumni. The Centre runs individual and group counselling programmes, provides reference and internet resources, as well as guidance in securing attachment, internship and employment. The Centre also coordinates practicum and attachment programmes for the university, manages a national placement and posting programme for the university's students, and administers a database of attaching organisations and firms.

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

This chapter attempts to draw some broad and general conclusions, and make some recommendations, as and where appropriate, based on the findings from the Institutional Reports, with emphasis on the effects that massification is having on the institutions and the way these institutions are dealing with the challenge innovatively.

7.1 Criteria for ‘Institutional’ Massification

As mentioned in Chapter 1 of this report, the term massification of higher education has so far generally been used to express the high rate of participation in higher education in a particular country or region, and it usually has a positive connotation, in the sense that it indicates the accessibility of higher education to the masses. The gross tertiary enrolment ratios in 2005 for Ghana, Kenya, Mozambique and Senegal (the figure for Burkina Faso was not available) were, respectively, 5%, 3%, 1% and 6%, (UIS, 2007). None of these countries can therefore even remotely be said to have experienced massification, as per the definition used by Trow (2000). However, all these countries have recorded a significant increase in higher education student enrolment over the past decade and, from that point of view, they have experienced a massification of their higher education.

It is noteworthy that none of the institutions questioned whether the term massification is applicable to them as institutions. They all interpreted massification as the large increase in student enrolment, as experienced by all of them. Indeed, the University of Nairobi Report specifically defined massification as “enrolment of students in large numbers”. Massification as it relates to an institution therefore requires a closer look.

Almost all higher education institutions in the world experience increased student enrolment, to varying degrees, over the years, but one would hesitate at saying that they are all experiencing massification. A simple guideline could be to specify a threshold for the average annual increase in student enrolment, maintained over several years, beyond which massification can be said to take place. But what that threshold should be is difficult to determine, and would invariably differ from one institution to another, as well as from one country or region to another. This requires further research. In this study all the seven participating institutions experienced an average annual increase of the order of 15-25% over the past decade, and for them that was clearly massification.

Also, institutional massification can have both a positive and a negative connotation. One could say that massification is positive for an institution if it has adequate physical, human and financial resources to cope with the rapid increase in enrolment. On the other hand, massification is negative when an institution does not have sufficient resources to cater for the increased enrolment. All the seven institutions surveyed in this study can be considered to have experienced negative massification, and they presented their Institutional Report from that perspective.

How to determine whether institutional massification is positive or negative is another area that requires further reflection and research. Clearly, one crucial factor is the student carrying capacity of the institution at any given point in time. But specifying criteria which determine the carrying capacity of an institution is not easy. Many countries, including some in Africa, have laid down minimum standards that have to be met in public higher education institutions, specified in terms of the requirement per student of lecture room space, laboratory space for lab-based programmes, number of books and periodicals, computers, etc. Such specifications, which need to be contextualised for each country, can prove to be a useful guide in determining whether massification has been positive or negative for an institution.

7.2 Creating an Institutional Database

Almost all the institutions reported having experienced difficulties in preparing their Institutional Report, even if this was not specifically mentioned in their Report. As a result, all of them took a considerably longer time to submit their Report, which inevitably delayed the completion of the study. The University Edouardo Mondlane, for example, acknowledged that its Report may not be comprehensive due to difficulties with data retrieval and processing, and this is true for a few other institutions as well. Data were also not always available. At Kenyatta University hardly any data were available earlier than 2002. At University of Ouagadougou the students enrolment records were available only as from 1995/96, and even then the gender breakdown was not recorded.

The following statement from the University of Nairobi Report aptly summarises the situation in most, if not all, the institutions: “During the study, a number of limitations and constraints, which threatened the quality or comprehensiveness of the exercise, were experienced. The limitations included lack of comprehensive and consistent data for all the items listed in the Guidelines for reporting, mainly due to poor records. In some situations, the team had to get into record cabinets themselves to obtain data, while in others, the team had to do with what was available.”

An important recommendation of this study has therefore to be that all African institutions must take urgent steps to create a comprehensive, computerized database of vital information about the institution which can then be quickly accessed and analysed. Such data are crucial for institutional decision- and policy-making in planning for massification. The database must be properly managed and regularly updated.

7.3 Planning for Massification at National Level

It would appear from the Institutional Reports that in most countries there is hardly any planning for increased enrolment in the higher education sector. The approach in most cases seems to be to deal with the problems and find solutions to overcome them as and when they arise.

All indicators show that the demand for higher education in Africa will continue to increase. Most African countries now have access to statistics to indicate the extent of increased enrolment and completion rates at secondary education level over the next decade leading to greater pressure on higher education. They can and should therefore develop a strategy for planning the expansion of their higher education system, taking into consideration that all African countries need imperatively to significantly increase their higher education enrolment ratio, and that the demands on the already meagre resources available for the education sector will increase. This can best be done by a high-level national body with the specific mandate of planning and coordinating the national higher or tertiary education system and advising government on the strategies to be adopted. Not all the countries have set up such a body.

A few important considerations should guide the planning for increased enrolment nationally. There is first a need to have diversified institutions comprising universities, polytechnics, technical colleges, teacher training colleges, professional institutes, etc., and there should be linkages and pathways among these institutions to facilitate the movement of students from one institution to another depending on their performance and ability. It is a fallacy to think of higher education purely in terms of universities. At the same time, every African country needs to have a few well-resourced, research-strong universities that can attract the best academically-oriented students and African faculty for teaching and research.

The national planning process must also take into account the human resources requirements of the country and should be in a position to advise prospective students, as well as higher education institutions, on the areas and levels of study relevant to the country over the next few years.

It is clear that it will not be possible for the huge and increasing demand for higher education to be met solely by public-funded institutions. In all the countries, private institutions have appeared and are operating. Governments should therefore encourage the setting up of private institutions but at the same time it should be ensured that they deliver quality education. All African countries should have a proper regulatory body for controlling the quality of private education as well as that of foreign providers of higher education. The same body should have the responsibility for promoting quality assurance in public institutions. Setting up such a body is not easy and there is need for a regional or sub-regional approach. However, by encouraging private institutions, governments should never abandon their support for public institutions on grounds that they do not have sufficient funds. Private institutions are very often purely guided by market requirements and profit motives and do not always take into account the broader, long-term economic and social needs of a country, which public-funded institutions must do.

This brings us to the perennial issue of public funding of higher education and the sensitive one of cost-recovery through tuition fees. It is again clear that African governments will not be able to continue to fully fund public higher education institutions in view of the increasing student enrolment and insufficient public funds. Some form of cost-recovery measure through tuition fees is almost inevitable if public institutions are to provide quality education. The danger here, however, is that higher education comes to be regarded as a 'private good' with the graduates, the beneficiaries since they benefit personally by improving their employability and social status, having to fully fund their studies. African governments should recognise that higher education is also a 'public good', playing a central role in the development of their nation and, accordingly, must benefit from state support (Mohamedbhai, 2003). While fees should be introduced, they should not be full cost recovery ones. And it is equally important that the introduction of fees be accompanied by appropriate loan schemes as well as scholarships for the very brilliant but disadvantaged students who cannot afford to pay any fees.

7.4 Planning for Massification at Institutional Level

There is equally a need for planning for very large enrolment at the level of every higher education institution. This does not really take place at present and only reactive, as opposed to pre-emptive, measures are being taken. A planning cell should be set up, attached to the office of the Vice-Chancellor or Rector, headed by a Director or Pro-Vice-Chancellor for Planning. The cell should continuously plan for and monitor the effects of massification, and advise management on appropriate measures to be taken, both in the short and long term.

In every institution steps should be taken to ensure that the maximum number of students enrolled complete their programme successfully. This is particularly relevant to Francophone institutions which experience large failures, especially in the initial years. In all institutions, because of the significant increase in student enrolment over the past decades, the actual number of students who do not complete their studies, or who take longer to do so, must have increased substantially. This represents a non-negligible wastage of resources for the institutions and for the country.

Two other vital considerations must guide higher education institutions in their planning for massification – quality and relevance. All institutions must set up an appropriate internal quality assurance mechanism, and they must equally establish linkages with all relevant stakeholders – government departments responsible for human resource development, industry and the private sector, their alumni, etc. – in determining the programmes to be offered and the intake into these programmes. The current unemployment of graduates from the higher education sector in Africa is a major problem and it might worsen with increased enrolment if appropriate measures are not taken.

It is very important that the teaching staff be trained to handle large cohorts of students. Some of the institutions have established appropriate training programmes but staff training in teaching and learning must become a requirement for all teaching staff in African higher education institutions. UNESCO has published a self-learning ‘Guide to Teaching and Learning in Higher Education’ (UNESCO, 2002) aimed at improving the relevance and quality of higher education in Africa. One of the modules of the Guide deals specifically with ‘Effective Teaching and Learning in Large Classes’. It is an excellent module and covers such topics as developing and implementing curriculum, organising practical work, cooperative group work, use of projects, etc. African higher education institutions must make full use of this Guide. Another module of the same Guide deals with ‘New Technologies in Teaching and Learning in Higher Education’ which also includes some useful tips on how to use technology to improve teaching.

With increased enrolment, inevitably students with varying abilities will get admitted, and not all of them may be suited for the programme to which they are admitted. There is therefore a greater need for close monitoring of the progress of the students and for counselling them. Institutions must create pathways to facilitate the movement of students from one programme to another more appropriate one. It should also be possible to award a lower level of qualification (for example a certificate or a diploma instead of a Bachelor’s degree) to allow an early exit of students who find they are unable to complete a programme. This will ensure that the years spent at an institution are not ‘wasted’ and also avoid the students having to repeat a year again and again.

7.5 Running of Parallel Programmes – a Panacea for University Funding?

Almost all the institutions reported innovative ways of generating their own income in order to supplement the grant they receive from government. What is clear, however, is that it is the charging of fees to students, whether tuition or registration fees, that really makes a difference to the institution’s budget. All the other efforts, such as renting of premises, undertaking consultancy, etc., while highly commendable and they need to be pursued, do not really make a dent on the institution’s financial situation.

This becomes clear when one examines, for example, the case of the university of Nairobi. The financial situation there was precarious until it decided to open up its campus to non-sponsored (i.e. full fee-paying) students. Now, nearly 60% of its students pay fees and over 40% of its budget is self-generated, mainly through these fees. The clear message here is that if government is unable to provide the funds necessary to run a public university, and charging of students’ fees to all students is unacceptable politically, the running of parallel programmes for students who are prepared to pay full-cost fees is probably the only solution.

This approach, however, has many pit-falls. In effect, the University of Nairobi is functioning in dual mode – partly as a highly-subsidised public university and partly as a not-for-profit

private university but using the same campus. It has also created two categories of students: one which pays full tuition fees and the other which does not. And the two categories are admitted on different criteria and are treated separately, although in many instances they follow essentially the same academic programmes. Most of the fee-paying students, because they come to campus mostly in the evenings and week-ends, often do not have the time to make full use of the university's facilities, and also do not have access to the university's subsidised students' residences. Admittedly some of the fee-paying students are working and prefer this arrangement, but a substantial number of them are fresh school leavers who have to bear the full brunt of the cost of their university education and living expenses. Inevitably, this dual situation creates resentment among the two categories of students. The fee-paying students are conscious of the fact that they are partially subsidising the education of the non fee-paying ones. The latter must be feeling that the institution's teaching staff treat the former more favourably because of the additional remuneration that they provide to the staff and the additional income they generate for the institution. The approach also causes friction and resentment among staff, not all of whom can participate in the running of self-sponsored programmes, thus affecting academic collegiality that universities are renowned for.

In fact, in an interesting study of Makerere University, which started running parallel programmes way back in 1989, it was found that, because a significant amount of money generated by self-sponsored students goes to top-up staff salaries, such students do not bring in as much revenue to the university as do public-funded students from government (Mamdani, 2007). The same study highlights other long-term negative consequences in having a large population of self-sponsored students on the same campus. For example, the university will be under pressure to mount programmes in response to market needs, leading to a proliferation of low-level, multi-disciplinary programmes to the detriment of strong, disciplinary ones which lead to research and scholarship. This could eventually lead to a commercialisation of public higher education and the slow death of research.

No public university in Africa can charge tuition fees without the blessing of its respective government and this is equally true in Kenya or Zimbabwe or Mozambique where parallel programmes for fee-paying students are run. The question that needs to be asked is: would it not be preferable to allow the universities to charge reduced tuition fees (say up to about 50% of the economic cost of running a programme), as suggested earlier, to all students who are then admitted purely on merit? The income generated by the universities would be essentially the same but there would be equity in the treatment of the students and the university will not be under pressure to run purely market-driven programmes.

Another solution, as proposed by Mamdani (2007), is that the professional or vocational programmes run by the university for self-sponsored students should be transferred to a separate college or such teaching entity, having its own budget and administration. Indeed, that is what the National University of Science and Technology is contemplating to do - to create a separate, semi-autonomous institution with its own complement of teaching staff to run its parallel programmes.

In view of the problem of massification in Africa, this is an issue that must be brought forward for open debate and discussion, together with the whole issue of funding of higher education, as increasingly cash-strapped African public universities would be tempted to follow the example of those universities that have financially benefited from the introduction of parallel programmes as a panacea for their funding problems. An in-depth study of a selective sample of public universities in Africa that have introduced parallel programmes for

full fee-paying students, as has been done at Makerere University, might be very useful in generating information that would guide African higher education policy-makers.

7.6 Improving and Expanding Physical Infrastructure

The description of the effects of massification on the physical resources of the universities, almost all of them, is quite alarming. A decade ago, in their famous book 'The African Experience with Higher Education', Ajayi et al. (1996) described the pitiful state of the physical resources of African universities. What they wrote in 1996 could be equally applicable now, in 2007, and the relevant extracts from their book could easily be transposed to several of the Institutional Reports. Major initiatives to revitalize African higher education have been announced since the beginning of the 21st century but it would seem that the institutions surveyed have not so far really benefited from those initiatives.

If urgent steps are not taken, the situation is likely to get worse over the next decade as enrolment increases. How will the institutions cope with such increases, given their present situation? There is a need for a significant expansion and amelioration of the existing infrastructure, including the provision of equipment for supporting teaching and research in science and technology areas, which inevitably require heavy capital funding. It is very difficult for public universities to generate sufficient income for infrastructural development and assistance from the private sector is not always forthcoming. The funding will have to come mainly from governments, not from their recurrent but their capital budget, or through government from loans and donor agencies.

The innovative approach used by the government of Ghana to use part of the contribution from the Value Added Tax for funding higher education, especially infrastructural development and acquisition of equipment, is therefore commendable. This is an example that other countries should emulate.

7.7 Students' Residences – What Future Role for Universities?

Closely linked to the problem of poor infrastructure in African universities is the state of their students' residences. The situation at some of the universities surveyed, for example the University Cheikh Anta Diop and the University of Nairobi, judging from the Reports, is deplorable. It is unacceptable for the future professionals and leaders of the country to experience such poor quality of life on campus. The other universities, too, are experiencing difficulties but perhaps to a lesser extent.

Two interesting initiatives have been reported. There is first the decision to make the university's land available to private property developers for the construction of students' hostels. No doubt such a move requires resolving many legal processes to ensure that the university maintains its legal right on the land. But clearly if the institution does not have the financial means to put up students' residences on land it owns, there is no reason why it should not encourage the private sector to do so, especially as universities are finding it increasingly difficult to control the residents and maintain the residences they own on the campus. Second, a couple of the institutions have taken the initiative to either encourage the construction of private hostels off the campus, and to identify and help to convert existing private blocks of flats not far from the campus into students' hostels. This, too, is a step in the right direction.

Most public African universities were built with the intention of providing accommodation on campus to the bulk of their students. This is no longer possible and will become even less so in the future. While the university has the duty to ensure that its students are adequately housed and to act as a facilitator in the process, it cannot continue to be primarily responsible for the financing and administration of their residences. The interesting initiatives taken by several universities to improve the quality of life of their students residing on campus is commendable but they have to address the root cause of the problem.

There is a need for a major re-think of the future role and responsibility of African universities in the provision of students' residences. There are no easy solutions to the problem but it does seem inevitable that the students will have to be the main contributors for their living expenses while studying.

In the same vein, the approach being used in Senegal and Burkina Faso to create universities in other parts of the country to mitigate the flow of students towards the city universities of University Cheikh Anta Diop and the University of Ouagadougou, respectively, is the correct one. However, the creation of new universities requires both financial and qualified human resources, both of which seem to be lacking in those countries at present.

7.8 The Importance of Staffing and the Imperative of Research

Almost all the institutions surveyed indicated that they were short of academic staff as reflected in the high staff/student ratios. This is not a desirable situation and affects the quality of teaching and learning in the institution. Perhaps a more serious consequence of having academic staff who are over-burdened with teaching and related assignments is that research in the institution suffers. Equally serious is the fact that, inevitably, in the long run, the heavy teaching load and other related duties will take a toll on the health of the staff, especially in cases of the older staff as at the University of Ghana, although none of the institutions reported on this particular aspect.

The employment of part-time or temporary teaching staff can help to alleviate the problem partially, but such staff are often either not trained to lecture at university level or do not have the desired postgraduate qualification and, in particular, do not undertake research. Every attempt must be made by the universities to recruit permanent academic staff, if necessary from other countries, and also limit the teaching load of their staff to a reasonable level. The AAU could consider running an online advertisement for its member institutions that will make the vacancies in the institutions known and will facilitate interested staff from within and outside Africa to apply. There is no doubt, however, that an African university will be able to attract and retain its academic staff only if the salaries are reasonable, if the conditions of service are adequate and, above all, if the university is in a peaceful country and the campus environment is free from political interference and is conducive to learning for both staff and students. The responsibility for achieving these conditions rests jointly with the state and the institution.

None of the seven institutions keep a record of their research activities and output and therefore could not demonstrate whether or not research had really suffered as a result of massification. Again, it is important for institutions to keep a good record of their research activities. This is perhaps more difficult than keeping records of students or staff, but it can be done. Each academic staff should be asked to submit, at the end of each academic year, a list of his/her publications and other research activities, such as research projects being

undertaken, supervision of postgraduate students, attendance at research seminars, etc. A computerised database of such information can be immensely useful to the institution and to the staff as well. Several institutions mentioned the creation of local research journals for publishing the research findings of academic staff, and that should be encouraged.

Another impediment to research is lack of funds. Most institutions allocate hardly any funds for research in their budget. Several of them rely on foreign and external sources of funding, the extreme case being the University of Edouardo Mondlane where almost all research is funded by external donor agencies or under bi-lateral agreements.

It cannot be over-emphasised that research is crucial for Africa and African universities must be in the forefront in undertaking research, both developmental and fundamental. They cannot abdicate their responsibility from such an important aspect of their mission. While private higher education institutions can make up for the additional teaching requirements of a country, these institutions will not normally undertake research. There is a serious risk that Africa will be further marginalised in the global knowledge economy if its universities do not actively produce and disseminate knowledge.

African governments also have the responsibility to promote research in their respective country. They should allocate funds to universities specifically for research and also, where it does not exist, set up a research council to encourage, coordinate and fund research nationally. Funding of research by external development agencies should of course be encouraged but it must be appreciated that such external funding cannot be sustained in the long run. Also, it must be ensured that externally funded research is relevant to national development needs, with local researchers playing a lead role.

None of the institutions surveyed mentioned about research collaboration with other universities, either in Africa or other regions of the world, to overcome their teaching and research constraints, although this was not specifically asked for in the Guidelines. With hindsight, another aspect that should perhaps have been included in the Guidelines is the contribution of the Diaspora. It is now acknowledged that it would be difficult to attract African Diaspora, lost through 'brain drain', back to the continent, but 'brain gain' is possible and the African Diaspora can play an important role in assisting universities of their country of origin in their teaching and research activities.

7.9 Using ICT for Effectiveness and Efficiency

The use of ICT for online learning is a very important development taking place in several of the institutions. Online learning is more often used by virtual universities to deliver complete programmes but some of the universities surveyed have realised the importance of integrating online learning within their programmes normally delivered by the face-to-face mode. Having a few modules delivered by the online learning mode not only frees lecture rooms for other uses and the lecturers for other activities, but it also equips students with a tool that they will inevitably use later in their career. However, most of the teaching staff have not been trained in the effective use of e-teaching and e-learning. There is a tendency of simply putting the lecture notes online for students to consult. This in no way improves the learning process. Institutions must put in place training programmes for assisting their staff in designing and developing e-learning material.

The African Virtual University which, after a slow start, has now been revitalised and is gathering momentum, can be a useful vehicle for promoting online learning in African

universities. The rapid increase in the availability of open source courseware makes online learning all the more important and relevant. However, a factor that should not be ignored is that there is often a preference among students for face-to-face traditional education since it is believed that education is more than just transmitting facts to an individual. The university student must be able to think critically, argue and reason in a community of peers and scholars – a need that online and virtual learning may not be able to meet fully.

A most promising use of ICT that a couple of the institutions are making use of is the live, simultaneous delivery of lectures to inter-connected lecture theatres. This partly solves the problem of having to split large cohorts of students into smaller groups for the purpose of delivering the same lecture either by the same lecturer or by different ones. Video conferencing is also being effectively used in a few institutions. Although none of the institutions made mention of it, the same technology can be used to relay lectures from outside the institution, either from another part of Africa or the world, especially in areas where local expertise is lacking.

An excellent example of the effectiveness of ICT in management is the software used by the University Cheikh Anta Diop for the planning and optimal use of its lecture rooms. No doubt many African universities could benefit from such an experience for use in the planning of their lecture room allocation.

It has become almost impossible for African universities to purchase hard copy journals for their libraries, partly because of the exorbitant cost of these journals and partly because of the devaluation of the local currency. However, the possibility of acquiring these journals electronically, either freely or at a fraction of their hard copy cost, exists, as described by the University of Nairobi. Such a facility can have a significant impact on boosting research in African universities.

None of the universities mentioned the cell phone as a means for facilitating communication between staff and students. Yet, although there is still a digital divide between Africa and other parts of the world, which is being very slowly bridged, the one ICT area in which Africa has made remarkable progress is mobile telephony. In fact, Africa is the region with the highest mobile cellular growth rate, the average annual growth over the past 5 years being about 50%. In 2006, there were about 21 mobile subscribers (compared to 3 fixed line subscribers) per 100 inhabitants in Africa (ITU, 2008). In devising their strategies for the use of ICT, African universities should include the use of cell phones either for communication among staff or between staff and students.

There is no doubt that ICT can enhance the efficiency and effectiveness of many of the operations of a university, be it teaching, research or management, thereby overcoming some of the constraints posed by massification. Reading through the Institutional Reports one gets the impression that not all the institutions are fully aware of the power and potential of ICT. Also, not all of them are in a position to fully utilise it, either because of poor national ICT infrastructure or lack of resources at the institutional level. There is, therefore, an urgent need for each African higher education institution to devise an institutional policy to encourage a greater use of ICT in their institution. At the same time, African countries must devise national policies to improve their ICT infrastructure. This can perhaps best be done at a regional or sub-regional level. In both institutional and national policies human resource development must figure prominently as there is a dearth of trained ICT professionals on the continent.

7.10 Concluding Note

From all indications, in Africa the phenomenon of massification, considered from the point of view of increased enrolment in higher education, will continue to exist, especially as the goals of Education For All at primary and secondary education levels are being met, thus increasing the availability of secondary education graduates wishing to pursue higher education. The increasing demand for qualified people to assist in the continent's economic, social and technological development will also require higher education institutions to increase their output of graduates. It is therefore incumbent on the higher education sector, both at national and institutional levels, to come up with innovative solutions to cope with the challenge; and there are many such innovative practices.

The main issues confronting massification are: funding of public institutions; the role of the private sector; coping with large enrolments at the institutional level; more teaching and research staff; improvement of the infrastructure; and greater use of ICT. The leitmotiv behind all these issues is quality and relevance of higher education. Some of these challenges can be dealt with at institutional level, others at national level and yet others require a regional approach.

If African governments and higher education institutions are to make headway and meet the challenges posed by massification, they must be prepared to plan, to innovate and to embrace change. It is also important to learn from experiences of others, but at the same time African higher education institutions should not be mere imitators, especially of solutions that may not always be appropriate to their local context.

Finally, the successful implementation of innovative strategies requires the active involvement of all stakeholders - policy makers; governments; management, staff and students of higher education institutions; and the general populace. There is no reason why African countries and higher education institutions cannot transform the challenges of massification into opportunities to make the higher education sector a vibrant and productive one.

BIBLIOGRAPHY

Adu, K. & Orivel, F. (2006). *Financing Strategy for Tertiary Education in Ghana*, Final report submitted to the National Council on Tertiary Education.

African Development Fund (ADF). (2006) Appraisal Report. *Multinational Support for Higher Education in WAEMU countries*.

African Union (AU). (2006). *Second Decade of Education for Africa (2006-2015). Draft Plan of Action*. Addis Ababa.

Ajayi et al. (1996). *The African Experience with Higher Education*, AAU. Ohio University Press Athens.

Altbach, P.G. (1982). Reform and Innovation in Higher Education: Introduction. *Educational Documentation and information*, Bulletin of the International Bureau of Education, No. 223.

APEID-UNESCO, (2006). *Higher Education in South-East Asia*, Bangkok: UNESCO.

Assié-Lumumba, N'Dri T. (2006). *Higher Education in Africa: Crises, Reforms and Transformation*, CODESRIA Working Paper Series, Dakar: CODESRIA.

Association of African Universities (AAU). (2004). *The Implications of WTO/GATS for Higher Education in Africa*, Proceedings of Accra Workshops on GATS, 27th-29th April 2004. Accra.

Association of African Universities (AAU). (2005) Core Programme of Activities 2005-2009. Accra, Ghana.

Association of African Universities (AAU). (2006) Planning consultation report. Regional Capacity Mobilisation Initiative (RCMI) for revitalizing higher education in Africa. December 5-6. Accra, Ghana.

Association of African Universities (AAU). (2007a). *The Working Group on Higher Education*. Retrieved from <http://www.aau.org/wghe/index.htm>

Association of African Universities (AAU). (2007b). Database of African Theses and Dissertations (DATAD). Retrieved from <http://www.aau.org/datad/index.htm>

Barret, B. (1998). 'What is the function of a University? Ivory tower or trade school for plumbers?' *Quality Assurance in Education*, 16(3).

Bennich-Björkman, L. (1997). *Organising Innovative Research: The Inner Life of University Departments*. Oxford: IAU and Elsevier.

Bloom, D. et al. (2005). *Higher Education and Economic Development in Africa*, Harvard University. Study commissioned by the World Bank. Washington, D.C.

British Committee on Higher Education. (1963). *Higher Education Report of the Committee Appointed by the Prime Minister under the Chairmanship of Lord Robbins, 1961-63*. London.

Chevaillier, T. (2000). *The Changing Conditions of Higher Education Teaching Personnel, Sectoral Activities Programme, Working Paper (IREDU –CNRS)/ Université de Bourgogne*, ILO Geneva, July.

Darkwa O. & Mazibuko F., (2000). *Creating Virtual Learning Communities in Africa: Challenges and Prospects* (Article in First Monday, Peer-reviewed journal on the Internet)

Dobson, I. R. (2001). *How Has Massification Changed the Shape of Australian Universities?* Tertiary Education and Management. 7. Kluwer Academic Publishers, The Netherlands.

Ekong, D & Cloete, N (1997). *Curriculum Responses to a Changing National and Global Environment in an African Context*. In Knowledge, Identity and Curriculum Transformation in Africa, Eds. Cloete, N. et al. Cape Town: Maskew Miller Longman.

Effah, P. (2005). *Private higher education: an analysis of its growth and expansion in African Countries*. UNESCO. Ed. N.V. Varghese. Paris.

Gibbons, M (1998) *Higher Education Relevance in the 21st Century*. Paper prepared for the World Bank as part of its contribution to the UNESCO World Conference on Higher Education. Paris, 5-9 October 1998.

Guri-Rosenblit S. & Sebkova H. (2004). *Diversification of Higher Education Systems: Patterns, Trends and Impacts*. UNESCO Forum on Higher Education, Research and Knowledge. Papers presented at the second scientific committee meeting for Europe and North America, Paris: UNESCO. 45, 52

Hayward M. F. (2006). *Accreditation and Quality Assurance in African Higher Education: Findings and Lessons Learned from a Survey of Africa*. First International Conference of Assessing Quality in Higher Education, December 11-13. University of Punjab, Lahore.

IEASA. (2007). *From Ivory Towers to Poverty Eradication: SARUA Gets Wings*. IEASA online newsletter, 7 February 2007. Retrieved from <http://www.nu.ac.za/ieasa/SARUA.asp>

International Telecommunication Union (ITU). 2008. *ICT Statistics*. Retrieved from <http://www.itu.int/ITU-D/ict/statistics/ict/index.html>

Juma, M. N. (2006). *Kenyatta University – African Virtual University, Kenya*. The Virtual University: Models and Messages, Lessons from Case Studies. UNESCO/IIEP, Paris.

Lomas L, (2001). *Does the development of mass education necessarily mean the end of quality?* The Sixth QHE Seminar, The end of Quality? Birmingham, 25-26 May 2001.

Mamdani, M. (2007). *Scholars in Marketplace. The Dilemmas of Neo-Liberal Reform at Makerere University, 1989-2005*. CODESRIA. Dakar

Materu,P. (2007). *Higher Education Quality Assurance in Sub-Saharan Africa*. World Bank Working Paper No. 124. Washington, D.C.

Mohamedbhai, G. (2003). *Globalization and its Implications for Universities in Developing Countries*. In Breton, G. and Lambert, M. (eds). *Universities and Globalization: Private Linkages*, Public Trust. UNESCO/Universite Laval/Economica. Paris.

Mwiria, K. & Ng'ethe, N. (2002). *Public Universities Reform in Kenya: Documenting Changes in the Last Decade*. A Report prepared for the Rockefeller Foundation. National Council for Tertiary Education: Handbook (199). Nairobi.

Obanya Pai (2004). *Educating for the Knowledge Economy*. Ibadan. Mosuro Publishers. Ibadan.

Oslen, J. (2000). *Is Virtual Education for Real?* TechKnowLogia (January-February: 16-18)

Partnership for Higher Education in Africa. (2007). *The Bandwidth Consortium: Opening the Power of the Internet to African Universities*. Retrieved from <http://www.foundation-partnership.org/pubs/press/bandwidth.php>

Rust, C., (1997). *Teaching and Learning in Times of Change*. Staff Conference, January. Christ Church College. Canterbury.

Saint, W (1992) *Universities in Africa: Strategies for Stabilization and Revitalization*. The World Bank. Washington, D.C.

Scott P. (1995). *The Meanings of Mass Higher Education* Buckingham SRHE: Open University Press.

Secondary Education In Africa (SEIA). (2008). Retrieved from <http://www.worldbank.org/afr/seia>

Sehgal, Vikas (2001). *Higher Education Policy in 3rd World Countries & Total Quality Management*. Total Quality Management in Education. UPPAL Publishing House. New Delhi.

Smithers, R. (2000). *Woodhead Attacks Vacuous Degrees*. The Guardian, 14 Aug. London.

The Economist. (2005). *Survey: Higher Education, A world of opportunity*, 8 Sept.. Retrieved in 2007 from <http://www.economist.com/displaystory.cfm>

Trow, M. (2000). *From Mass Higher Education to Universal Access: The American Advantage*. Research and Occasional Paper Series, Center for Studies in Higher Education. UC Berkeley.

UNESCO-BREDA, (1997). *Report on the State of Education in Africa: Challenges and Reconstruction*. UNESCO Regional Office for Education in Africa (BREDA). Nov. UNESCO, Dakar. .

UNESCO. (1999). *Higher education and society: A student perspective*. Report on the Thematic Debate at the World conference on Higher Education, Paris 5-9 October, 1998, Paris: UNESCO

UNESCO. (2002). *Guide to Teaching and Learning in Higher Education*. Retrieved from http://www.harare.unesco.org/heresource/guide_to_teaching.htm

UNESCO (2003). *Recent Developments and Future Prospects of Higher Education in Sub-Saharan Africa*. UNESCO Regional Office for Education in Africa (BREDA) and UNESCO Harare Cluster Office. Paris.

UNESCO. (2003). *Higher Education in Asia and the Pacific 1998-2003*. Regional report on progress in implementing recommendations of the 1998 World Conference on Higher Education. Second Session of the Regional Follow-up Committee, 25-26 February. Bangkok.

UNESCO. (2007a). *Education for All*. Global Monitoring Report. Paris.

UNESCO. (2007b). *The Virtual University: Models and Messages*. Retrieved from <http://www.unesco.org/iiep/virtualuniversity/home.php>

Varghese, N.V. (2004). *Private Higher Education in Africa*. UNESCO-IIEP. Paris.

Wikipedia. (2005). *Higher education in China*.

Working Group on Higher Education (WGHE). (2004). *Higher Education Innovations in Sub-Saharan Africa, with Specific Reference to Universities*. Association of African Universities. Accra.

World Bank (2002), *Constructing Knowledge Societies: New Challenges for Tertiary Education*. The World Bank. Washington, D.C.

Yang, R. (2002). *Lost Opportunities in the Massification of Higher Education in China*, International Higher Education, Summer 2002. Retrieved in 2007 from http://www.bc.edu/bc_org/avp/soe/cihe/newsletter/

ANNEX 1

Composition of Institutional Report Teams in the Participating Universities

University of Cheikh Anta Diop

Prof Abdou Karim NDOYE (Coordinator)

Prof Saliou NDIAYE

University Edouardo Mondlane

Dr Arlindo SITOIE (Coordinator)

Ms Emilia MACHAIEIE
Mr Ivan COLLINSON
Prof C. MADIVATE

University of Ghana

Prof Esi SUTHERLAND-ADDY (Coordinator)
Prof William A. ASOMANING
Prof Elovu DOVLO

University of Nairobi

Prof Patrick O. DIGOLO (Coordinator)
Prof George O. MAGOHA (Vice-Chancellor)
Dr Japheth ORIGA
Dr Paul ODUNDO
Mr Isaiah NYANDEGA

University of Ouagadougou

Dr Youssouf OUEDRAOGO (Coordinator)
Prof Alfred TRAORE
Mr Adama SANOU

Kenyatta University

Prof Philip OWINO (Coordinator)
Mr Calvin OREDI
Ms Irene KINUTHIA
Ms Juliet MUNYOKI

National University of Science and Technology

Prof Lindela R. NDOLOVU (Vice-Chancellor) (Coordinator)
Prof Blessing T. MOYO
Prof Stanley MPOFU

ANNEX 2

STUDY OF THE EFFECTS OF MASSIFICATION ON HIGHER EDUCATION IN AFRICA

Guidelines for Preparing Institutional Reports

PART 1: INTRODUCTION AND BACKGROUND

1. Introduction

The Working Group on Higher Education (WGHE) of the Association for the Development of Education in Africa (ADEA) is funding an analytical comparative study on the “*Effects of Massification on Higher Education in Africa*”. Specifically, the study will assess the effects of massification on teaching, examination performance, research, physical facilities, institutional management, financing, and student quality of life. The study, which is a follow up to the WGHE Innovations Survey conducted in 2003, will identify and share the experiences of institutions that are addressing the problem of massification through innovative ways and campus transformation, the end product being an analytical Synthesis Report with recommendations to institutions, policy makers and stakeholders in higher education in Africa.

2. Background

In industrialised countries the most far-reaching effect on higher education after World War II was the massive increases in student enrolments and the shift from elite to mass higher education. Termed the *massification* of higher education, it has been described as “the most critical contemporary force pressing on universities”. It has also been referred to as a modern-day “revolution” in higher education. Globally, massification has numerous consequences for higher education systems, not just in terms of the increase in student numbers but the accompanying changes in the composition, character and aspirations of the student population as well as of staff, the variety of institutions, the range and diversity of course offerings, the demands for reform, changes in governance structures and funding mechanisms, the demand for greater accountability, and above all, the demand for relevance and responsiveness to beneficiary and societal needs.

The global trend of a rapidly growing demand for tertiary education in Africa is seen also in the number of students’ enrolments, which increased by 15% (on average 2.6% annually) between 1985 and 2002. Among the ten countries with the highest rates of increase were Rwanda (55%), Namibia (46%), Uganda (37%), Tanzania (32%), Cote d’Ivoire (28%), Kenya (27%), Chad (27%), Botswana (22%), and Cameroon (22%). Compared with other regions of the world however, this rapidly increasing rate in enrolments in Africa is still very limited, although if continued, will double every five years. Although nowhere near the scale in industrialized countries, tertiary enrolments in Africa which have increased considerably mainly at the undergraduate level and in Universities has come at a cost, resulting not only in the expansion of existing institutions but the establishment of a variety of new ones both public and private, including vocational and professional institutions, causing the quality of education to decline in many countries, as resources are stretched increasingly thin.

3. Scope and Approach

Following a call for proposals, which the AAU issued in August 2006 on behalf of the WGHE, a number of institutions interested in participating in the study submitted proposals. AAU subsequently appointed two independent assessors who vetted the proposals and presented a shortlist of institutions by merit. AAU then drew an additional list of institutions to ensure sub-regional and linguistic representation in the study.

Each selected institution is now being asked to prepare an Institutional Report describing the problem of massification and the innovative steps taken to overcome the negative effects. It is expected that a team of staff selected by the institution will prepare this report, and they will then become the contact point for the study for the institution. AAU has further appointed a

Consultant to visit the institutions to complement the information obtained in the Institutional Reports, which will then be compared and analysed and a Synthesis Report prepared.

PART 2: GUIDELINES

(These Guidelines are for the staff preparing the Institutional Report)

General Guidelines

The Institutional Report is an important document and forms the basis for the overall study. It helps to capture as much qualitative and quantitative information and data relevant to massification in the institution as possible, preferably before the arrival of the Consultant. The staff identified to prepare the report would have to consult a number of internal documents and seek information on statistics from the institution's secretariat, the finance section, the library, the computer department, etc. They may also need to consult Deans of Faculty, Heads of Department, other staff and students' representatives, etc. It would be advisable for management to issue them with a letter authorising them to seek the information for the purpose of this study.

What follows is an outline of what should be covered in the report. This outline is indicative as each institution has its own specificity. Not all the sections of the outline may be applicable to all institutions and it is possible that not all the information sought would be available.

For consistency of terminology, "student enrolment" should be taken to mean the total number of students, at all levels, in all the years. The number of students entering the institution each year should be referred to as "student intake", those graduating as "student output". Also, since massification refers to an increase in number of students, it is important to establish a reference period for all the institutions being surveyed. For this study the starting year for the reference period will be 1986 and the end year as 2006. It is suggested that you quote figures at five years' interval (1986, 1991, 1996, 2001 and 2006) to illustrate the trend.

The report should be prepared in an electronic format as a MS Word document. As far as possible the data should be presented in tabular form. You may also use charts or graphs, but in that case please provide the raw data in an appendix.

1. Overview of Higher Education System in the Country

The aim of this first section is to situate the institution being surveyed within the tertiary/higher education system in the country. This should cover between half to one page.

- Number of institutions, both public and private, indicating the nature of the institutions, e.g. university (traditional or open), polytechnic, technical and teacher training college, etc.
- Number of students enrolled in the institutions in 2006. If possible indicate the increase in total student enrolment over the period 1986 to 2006.

- Any special comments on the national system in relation to the problem of massification, e.g. creation of new institutions, introduction of tuition fees, relevant Government's decisions, expansion of the secondary school system, etc.

2. Profile of Institution

This section describes the institution as it is at present.

- Very brief history of the institution.
- Its various Faculties and types of programmes being run.
- Student enrolment in the different Faculties, showing proportion of male and female students, undergraduate and postgraduate students, foreign students, etc.
- Number of academic and support staff employed in the whole institution and in the different Faculties. Indicate number of full-time and part-time teaching staff.
- Indicate existing physical infrastructure (if possible in terms of square metres) for different uses (lecture rooms, library, student residences, cafeteria, sports complex, etc.). Also mention if there is only one campus or different campuses.
- The recurrent budget of the institution, indicating the grant received from government and the amount generated by the institution itself or obtained from other sources. Indicate also what proportion of the budget is spent on academic activities (teaching, research & community service) and what proportion on non-academic activities (student grants, cafeteria expenses, etc.).
- Any other information relevant to the massification problem.

3. Effects of Massification

This section will illustrate the problem of massification and its effects on the institution over the survey period of 1986-2006. It is an important section as it relates directly to the next section which will deal with steps taken to overcome the problems.

- Show the increase in student enrolment over the survey period. Indicate the proportion of male and female students, undergraduate and postgraduate students, foreign students, etc.
- Show the student intake over the survey period, indicating what percentage of the qualified applicants is admitted at each five-year interval.
- Show the output of graduating students over the period.
- Indicate the overall student failure rate in the first and final years.
- Indicate the average % of students repeating a course.
- It would be useful to know if the increasing number of graduates finding suitable employment over the period. It may be difficult to obtain quantitative data but it may be possible to make a qualitative assessment by interviewing the appropriate authorities.
- Show the number of academic staff over the survey period, clearly indicating the number of full-time and part-time staff. If possible also show the number of academic staff recruited and the number who left the institution.
- Show the number of support staff over the survey period.
- Indicate the average teaching load of academic staff over the survey period.
- How has the research output been affected? Use number of on-going research projects and the number publications as a guide.

- Show the annual recurrent budget of the institution over the survey period, separating the grant allocated by government and the funds generated by the institution or obtained from other sources. Indicate the proportion of the total budget used for academic and non-academic purposes over the period.
- Show the library holdings (books and periodicals) over the survey period. Show also the funds allocated to the library over the period.
- Show the amount of funds allocated to purchasing equipment and consumables for laboratories for science and technology courses over the survey period.
- Mention any physical/infrastructural development that has taken place over the period (e.g. construction of a new building for lecture rooms, extension of the library, residential facilities for the students, additional sports complex, etc.) indicating when each building became effectively usable.
- Indicate the availability of Information and Communication Technologies (ICT) on campus e.g. the number of Personal Computers accessible to students, number of internet accessibility points, etc.
- In addition to the above effects, list any specific negative effects that massification has had on the institution

4. Innovative Approaches to Address the Problem of Massification

This is the most important part of the report. The emphasis here is on innovation. It is unlikely that your institution would be in a position to report innovative practices in all the sections that follow. Describe and explain each innovation, when it was introduced and its positive effects. Mention also how the innovation has been funded (by the institution itself, by the private sector, by a funding/donor agency). If an innovative approach turned out to be unsuccessful, you should still report it, mentioning the reasons why it failed as it may serve as a lesson to other institutions.

4.1. Teaching

- New approaches to manage large enrolment
 - Splitting classes into smaller groups
 - Running evening classes
 - Using DE and/or online learning
 - Managing tutorials, laboratory practicals, supervision of projects and dissertations
- Use of technologies for larger classes: audio-visual equipment, Power Point presentations, etc.
- Staff training to deal with larger classes
- Employment of part-time lecturers or sharing of staff with other institutions
- Regular assessment of students' performance

4.2. Examination Performance

- Ensuring quality and security in preparing examination papers and handling of students' scripts
- Use of External Examiners
- Conduct of examinations, including security aspects
- Assessment and performance in examinations

4.3. Physical Facilities

- Innovative uses of teaching space, library facilities, laboratories, students' hostels, cafeteria, IT facilities, etc.
- Information on any private sector contribution to the development or improvement of the physical facilities
- Information on contribution from any development /funding /donor agency for any development or improvement of physical facilities

4.4. Research

- Encouraging staff to undertake research & consultancy in spite of heavy teaching load
- Publication of research findings
- Encouraging postgraduate students' research

4.5. Institutional Management and Governance

- Use of strategic planning
- Introduction of internal quality assurance systems
- Effective management of physical, human and financial resources
- Effective use of ICT in management
- Devolution of management
- New approaches to governance e.g. involvement of students in governance structures

4.6. Financing

- Effective and efficient use of financial resources
- Devolution of funds to cost centres
- Costing of all institutional activities
- Income generation
- Funding from private sector and from development/funding/donor agencies

4.7. Student Quality of Life

- Students' residences and their maintenance
- Transport facilities for those students living off campus
- Counselling and guidance to students
- Provision of health services (especially w.r.t. HIV/AIDS)
- Quality of cafeteria and sanitary facilities
- Adequate sports facilities
- Ensuring security on campus
- Governance of students' affairs
- Initiatives by students' body in improving their own quality of life

4.8. Other Innovative Approaches

5. References

List all the reports, documents, publications you consulted in preparing this report. The Consultant may wish to have access to some of the documents during his visit to your institution.
