INVESTMENT IN HIGHER EDUCATION FOR DEVELOPMENT: New Directions

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Universities in Southern Africa face a great many challenges. Perhaps the greatest of these is to substantially increase student enrolments, enabling far greater numbers of students from socially or economically marginalised groups access to higher education and the opportunities it brings, while maintaining or improving the standards of quality and the relevance of the courses they take. To do this successfully in the long term requires substantial investment. Investment in institutional infrastructure such as lecture halls, laboratories, libraries and halls of residence, investment in equipment, ICT infrastructure and computers; and investment in, perhaps the most precious resource of all, the skills, knowledge and experience of the academic staff entrusted with the primary teaching, learning, research and community engagement mission.

While many African universities enjoyed a brief renaissance period in the immediate aftermath of independence, attracting considerable support and public investment from both national governments and international donors, many were severely impacted by the structural adjustment programmes their governments were forced to adopt in the 1980s and 1990s, which effectively cut back on investment in the sector. Then, although things may have appeared to be improving for a while in the early years of the new millennium, the current global economic recession has again imposed severe ceilings; particularly on the funding universities receive from their governments. Yet the challenge of increasing access and participation has not receded - on the contrary it grows more daunting!

It becomes obvious therefore that robust financial planning and control; making the best use of the scarce resources at universities disposal; innovative new ways of raising funds; methods of spreading the financial burden over time and between different constituencies, and new models of public/private funding for universities are absolutely critical to SADC institutions, if they are to survive and to prosper.

As an association of public universities in Southern Africa, SARUA’s long term aim is to contribute to the revitalisation of higher education in its region. In the context of this overarching objective and the challenges faced by its member universities, as described above, it is clear that SARUA and its members must engage vigorously with the challenges of university funding and finances. In fact, one of the earliest studies undertaken by the organisation in 2008 was an overview of various higher education funding models1.

The introduction of a series of “Executive Focus” events, as part of SARUA’s Governance, Leadership and Management Programme in 2010, therefore, provided a clear opportunity to bring some of the top management responsible for university finances together to share their own experience and expertise, and gain new insights and see new possibilities from the experience and perspective of colleagues. The said conference titled ‘Investment in Higher Education for Development – New Directions’ took place at the University of Dar es Salaam in Tanzania on 5 August 2010.

Piyushi Kotecha
Series Editor
Chief Executive Office
SARUA

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## CONTENTS

**FOREWORD**  
3

**ABBREVIATIONS**  
7

**INTRODUCTION**  
8

**HIGHER EDUCATION AND DEVELOPMENT: A CRITICAL NEXUS – W.S. Abeli**  
9

- Abstract  
9  
- Introduction  
9  
- University Education Versus Development  
10  
- Higher Education in Tanzania  
12  
-- Tertiary and higher education  
12  
-- Student enrolment  
12  
-- University outputs/graduates  
12  
-- Challenges faced by Universities and measures being taken  
13  
- Higher Education and Development in Tanzania  
15  
-- Agriculture  
15  
-- Engineering  
16  
-- Education  
16  
-- Health  
16  
-- Business and Finance  
16  
-- Law  
16  
-- Research and technology  
16  
-- Decision makers  
17  
-- Governance  
17  
- Conclusion  
17  
- References  
18

**FUNDING IN HIGHER EDUCATION: TRENDS AND POSSIBILITIES – Pundy Pillay**  
19

- The Higher Education Financing Context  
19  
-- The Main Barrier to Access: Poor and Inadequate Schooling  
20  
-- Public Commitment to Higher Education Spending  
20  
- Higher Education and Development  
21  
- Some Common Themes  
21  
- Good Practices  
23  
-- Financing practices that address the inadequacy of public expenditure  
23  
-- Financing policies that address equity  
23  
-- Financing policies that address efficiency  
24  
- Some Possible Lessons  
24  
-- Cost Recovery  
24  
-- Developing an efficient and equitable loan scheme  
26  
-- Developing a higher education funding formula to promote more effective utilisation of financial resources and attain higher education objectives  
26
FUNDING HIGHER EDUCATION INFRASTRUCTURE INVESTMENT:  
THE CASE OF WITS UNIVERSITY – *Patrick FitzGerald and Spencer Hodgson*  

- Abstract  
- Introduction  
  - The infrastructure need  
  - Opportunity and challenge – Government funding, 2007-09 and 2010-11  
- Organisation, governance and capacity  
  - Line function and project consultation  
  - Integrating client aspirations  
  - Drawing on university expertise  
- Innovation to achieve delivery and value  
  - Adopting an innovative procurement and contracting strategy  
  - Chamber of Mines Engineering Building - 4th Quadrant (R70 m target project cost)  
  - Wits Science Stadium (R178 m target project cost)  
  - The Wits Art Museum (Estimated cost R68 m)  
- Fundraising, alternative project financing and delivery  
  - Wits professional development hub (R90 m short-course centre)  
  - The Parktown Village Residence development (R490m)  
- WITS spatial development framework – context and direction  
- Conclusions  
  - Key modalities for success  
  - Innovation  
  - Commitment (mindset) leading to synergy  
  - Challenges and reward  

FINANCING PUBLIC HIGHER EDUCATION EXPANSION IN SUB-SAHARAN AFRICA:  
TOWARDS ECLECTIC BUSINESS MODELS – *Johnson M. Ishengoma*  

- Abstract  
- Introduction: Some Facts About Higher Education in Sub-Saharan Africa  
- Models and Approaches for Financing Public Higher Education in Sub-Saharan Africa  
  - Full Government Funding Model  
  - Cost Sharing Model  
  - Privately Sponsored Students Programme Model  
  - Donor Contribution/Support Model  
- Towards New Innovative Models/Approaches for Financing Public Higher Education Expansion  
  - Business Model or Market Model  
  - Bonds Issues  
  - Higher Education-Specific Financing Facilities  
  - Credit/Unit Based Tuition Fee Financing  
  - Establishing Higher Education Investment Banks (HEIB) or Higher Education Development Banks  
- References
CRITICAL SUCCESS FACTORS IN HIGHER EDUCATION FINANCE AND PLANNING:
AN INSTITUTIONAL PERSPECTIVE – Yunus D. Mgaya and Razack Lokina

- Abstract
- Introduction
- Sources and Trends of Financing in Higher Education Institutions in Tanzania
  - Direct Government Subvention
  - International Donor Support
  - Private Sector Financial Support
  - Self-Generated Funds and Cost Cutting Measures
- References

ABBREVIATIONS

BRT - Buss Rapid Transport
DIT - Dar es Salaam Institute of Technology
DOE - Department of Education
DOHET - Department of Higher Education and Training
DVC - Deputy Vice Chancellor
GDP - Gross Domestic Product
GER - Gross Enrolment Ratio
GNP - Gross National Product
HEDP - Higher Education Development Programme
HEI - Higher Education Institutions
HEIB - Higher Education Investment Bank
HESLB - Higher Education Students Loans Board
HIPC - Heavily Indebted Poor Countries
IFC - International Finance Corporation
IUCEA - Inter University Council of East Africa
KI - Knowledge Index
PPP - Public-Private Partnership
SADC - Southern African Development Community
STHEP - Science and Technology Higher Education Project
SSA - Sun-Saharan Africa
TEA - Tanzania Education Authority
UDOM - University of Dodoma
UDSM - University of Dar es Salaam
UNES - University of Nairobi Enterprise and Services
UPE - Universal Primary Education
Renewed recognition and appreciation for the contribution of Higher Education to development is evident globally, as countries and multi-lateral agencies promote increasing investment in the sector. To what extent is this trend evident in Southern African countries? What are the trends in higher education investment and what are the frameworks guiding such investments? What innovations and practices are emerging in higher education funding aimed at meeting the growing demand in the sector, while mediating competing claims for scarce financial resources?

These and other pertinent questions were discussed at a leadership dialogue convened by SARUA to review and analyse trends in higher education financing in the region, as well as emerging innovations and practices for funding higher education expansion. A series of presentations on this topic provided the basis for discussing the scale and scope of the challenges and opportunities for increasing investment in higher education in the region. The University of Dar es Salaam in Tanzania provided both an ideal location and an illuminating case study for such a conference. The opening paper, in this publication, by Professor Abeli, provides encouraging evidence of the growing support for, and public investment in, higher education by the government of Tanzania, a country where the Gross Enrolment Ratio (GER), the actual number of students enrolled in the system and the number of institutions have all improved dramatically in the last decade. This theme is picked up later by Yunus Magaya and Razack Lokina, who provide fascinating insights as to how Tanzania’s longest established university, the University of Dar es Salaam has managed to substantially reduce its dependence on public financing and has developed a lucrative income stream of its own during the same period.

Pundy Pillay, an acknowledged expert in this field, and who was responsible for SARUA’s first analysis of various public higher education funding models used in sub-Saharan Africa (see above), was again on hand to challenge universities and governments alike to look at funding formulae that can be used to steer the system towards the outputs its citizens, as the ultimate financers of the system, demand.

A breath of inspiration was provided by the Deputy Vice-Chancellor for Finance of Wits University in South Africa, with a case study on the considerable infrastructural development the university has undertaken in recent years. Prof Fitzgerald’s paper demonstrates how through the use of imagination, backed up by solid controls over budget and cash flow and expert project management skills, Wits university was able to turn an original R200 million pledge by the Department of Education into a R1.2 billion capital development programme over a number of years involving a range of different funding techniques.

The theme of innovation continued in the paper presented by John Ishengoma, who having painted a somewhat bleak picture of the success (or otherwise) of current funding models in meeting the needs of African higher education, was able to stimulate everyone’s thinking with a number of innovative suggestions for the future including a Higher Education Investment Bank (modelled on similar lines to the existing African Development Bank), bond issues, higher education specific financing facilities and unit based tuition fee financing.

Finally, as highlighted earlier, the excellent paper by Yunus Magaya and Razack Lokina is an in depth, but ultimately inspiring account of perseverance, commitment to excellence and an innovative approach to financing and securing its own future, by the University of Dar es Salaam.

All of the above papers are contained in this publication, which we are certain will provide its readers with some useful insights, knowledge and background to the unique challenges of financing higher education in Southern Africa, but most importantly, we hope, may also stimulate debate and promote a synthesis of new ideas and knowledge sharing that will help universities overcome such challenges.

August 2010
ABSTRACT

In the 1980s, university education systems in many developing countries started to decline due to the imposition of the World Bank Structural Economic Adjustment policy. Reduced resource allocations, due to the perception that higher education had low socio-economic returns, led to privatisation and encouragement of Public-Private Partnership in higher education. Despite the private sector’s contribution being significant, the state is still the main financier of higher education in most countries. Having realised that university education is key to the country’s development and a catalyst for bringing about socio-economic changes; universities need to be supported through investment so that they are able to play their roles as intellectual, cultural and knowledge-generating centres. Globally, universities are facing similar challenges: inadequate funding, dilapidated infrastructure, ageing and fewer qualified staff, the brain drain and few students enrolled in science and technology programmes. Since Tanzania intends to be a middle income country by 2025, it has to invest in higher education so that by 2015, the Gross Enrolment Ratio (GER) in higher education is at least 10%. Not only will high GER in higher education contribute to high productivity and improved service delivery, but it will ensure active participation in international and regional co-operation and good governance. Good governance which is based on the rule of law and respect for human rights usually leads to peace and harmony, which encourages both internal and external investments. The government of Tanzania has started to invest and address some of the challenges facing universities by the following interventions: setting aside 26% of its education budget for higher education, supporting staff development programmes, providing higher education student loans to both public and private institutions, engagement of retiring professors on contracts, improving staff retirement packages, setting aside 1% of its GDP for research and development, and connecting all institutions into a network. Development of the Higher Education Development Programme aims at ensuring that higher education contributes to the sustainable development, transformation and well-being of the country.

INTRODUCTION

Prior to the World Bank Structural Economic Adjustments or reforms of the 1980s, the states had the monopoly on policy, planning and provision of higher education (IIEP, 2009). The decline of the university education system in many developing countries is associated with the imposition of Structural Adjustment. This is because, during this period, most countries were advised to concentrate on primary, secondary and vocational education as these were the ones with high socio-economic returns (Muchie, 2009). Since higher education was not considered to be a priority sector, because of low social returns,
it received low resource allocations in many poverty reduction strategy papers and joint assistance strategy frameworks, signed between the governments and development partners. In Tanzania for example, since higher education was not amongst the seven priority sectors, the sub-sector never received debt relief resources under the Heavily Indebted Poor Countries (HIPC) policy framework. This was indeed a tragedy as it resulted in higher education getting less funding from both the government and the development partners.

It took almost 15 years for many African countries to realise that if the education sector was to be transformed, higher education had to be taken on board. It became clear that higher education is where teachers are trained for secondary schools and for teacher training colleges (which, in turn, train primary school teachers); higher education is where curricula at all levels are developed, where a range of leaders and decision makers are cultivated, and above all, where knowledge and research for development are nurtured (Muchie, 2009).

Reduced availability of resources (due to structural adjustment policies) and the inability of states to meet their obligations led to privatisation and the encouragement of public-private partnership (PPP) in education. Public universities were forced to generate incomes internally for their survival and encouraged to enrol fee-paying students. Although PPP has contributed positively to the provision of education in most countries, this type of partnership has led to a three-tier education system: community schools or colleges for the poor, public schools or colleges for the middle class and private schools or colleges for the rich (IIPE, 2009).

To date, despite the involvement of the private sector through public-private partnerships, the states are still the main financiers of higher education in most developing countries. Public institutions get almost all of their operational and development funds from the government. In addition, institutions supplement their budgets by generating incomes internally through charging fees to students and soliciting grants and loans from various sources. Private institutions on the other hand get government subsidies in the form of tax relief on educational materials. They also get grants and loans from the government for training and infrastructure development.

Since many countries have now come to realise that university education is key to any country’s development, many are now investing in higher education in order to create knowledge and the human resources required for the country’s long-term development.

**UNIVERSITY EDUCATION VERSUS DEVELOPMENT**

In most cases, development is assessed using indicators like GNP, GDP, balance of payments and external debt, and occasionally excludes social indicators like political parameters, cultural well-being, income distribution and human development (Edigeji, 2009). Human development is essential when assessing development as it measures quality of life and the socio-economic status of the population. As universities are intellectual, cultural and knowledge generating centres, they need to be supported through investments in order to play their key roles of training and conducting research. For their research and training to contribute to socio-economic development (Edigeji, 2009), universities need to develop the following programmes:
to train and empower students to become critical thinkers;
• to equip students with competency, skills and confidence required for socio-economic development;
• to promote political freedom, democracy, human rights, equity, justice and good governance;
• to produce technocrats, political and administrative leaders able to address developmental issues and challenges facing the society;
• to produce professionals capable of planning, developing policies, managing, designing and inventing new products and solutions;
• to serve the needs of the market, the public and the surrounding communities;
• to produce graduate entrepreneurs who will promote social-economic enterprises at community level;
• to work with the industry to turn innovations and research outputs into commercial products; and
• to forge strong relationships with the business community in order to secure research and investment funds.

Unfortunately, the majority of universities in many developing countries have limited partnerships with the business community and low capacity to turn innovations into commercial products. Research funds especially for basic and innovative research also are limited. These limitations, together with low enrolment of students in science and technology programmes, are cited as amongst the main factors contributing to the inability to produce enough innovative and entrepreneurial graduates. According to Mwapachu (2010), only about 28% of higher education students in Africa are enrolled in science and technology programmes. Studies in SADC countries have also shown that the majority of universities have social science faculties and very few science and engineering faculties (SARUA, 2008).

Although universities are supposed to be the engines of change and drivers or agents for socio-economic and technological development, the majority of them are facing a number of challenges (Muchie, 2009; SARUA, 2008). The challenges which most universities are facing include the following:
• Little investment and inadequate budgets set aside by governments to run universities;
• Competition for resources with other more popular sectors like the primary and vocational training sub-sectors, health, agriculture, water and infrastructure;
• Competition with other institutions for good students and academic staff;
• Increasing student fees due to high running costs of universities;
• Dilapidated infrastructure and aging teaching facilities;
• Brain drain to greener pastures, politics and other better paid jobs;
• Poor staff incentive packages and retention schemes;
• Ageing and high retirement rate of senior and experienced staff, with no succession plans;
• Few students with an interest in science and technology programmes, i.e. less than 22%;
• More students enrolled in social sciences, management and business programmes (70%);
• Lack of qualified teaching and technical staff in the market;
• Pressure to produce more graduates especially in the fields of education, agriculture and health;
• General feeling from the public that universities are producing job seekers rather than job creators, due to lack of practical and entrepreneurship skills;
• High dependence on external donors especially for research and innovation funds;
• Gender imbalance especially in science and technology programmes.
For universities to be able to address these challenges, they have to engage and work closely with governments. They have to ensure that they are relevant to the society and responsive to the needs of the society, or play more public roles (Edigheji, 2009). The more the public understands and appreciates the roles and contributions of universities in socio-economic development, the better the chances of universities getting more public sympathy and ultimately more public funds.

**HIGHER EDUCATION IN TANZANIA**

**Tertiary and higher education**

Tertiary or post-secondary education is offered by universities, non-university higher learning institutions and teacher training colleges, with qualifications from the levels of certificate, ordinary diploma, higher diploma, advanced diploma and postgraduate diploma, to Bachelor’s degrees, Masters’ degrees and PhDs. The subset of degrees and postgraduate diplomas is generally known as higher education.

**Student enrolment**

Currently there are 22 universities and 10 university colleges in Tanzania, offering both tertiary and higher education. Of these, 8 are public universities and 14 are private universities, while 3 are public university colleges and 7 are private university colleges. Although private institutions (allowed to operate 15 years ago) outnumber public institutions, the number of students in private universities and colleges total only 35 123 or 29.5% of the total number of 118 951 (tertiary) students enrolled in all the universities and university colleges in 2009-10. Undergraduate students accounted for about 81% of the students, while postgraduates accounted for about 9% and non-degree students about 10% (BEST, 2010).

During the same period, a total of 50 173 students were enrolled in over 195 non-degree learning institutions to pursue courses for certificates, ordinary diplomas, advanced diplomas, postgraduate diplomas and degrees. In addition, 36 648 students were enrolled in about 77 teacher training colleges for certificate and diploma courses in education. Therefore, the total number of students enrolled in universities, non-university learning institutions and teacher training colleges, to pursue tertiary education in 2009-10, was 205 772 (BEST, 2010). In terms of the Gross Enrolment Ratio (GER), this is equivalent to 6.4% of the age cohorts in tertiary education.

The total number of students pursuing higher education in Tanzania in 2009-10, on the other hand, was 128 240 (107 300) in universities and 20 940 in 34 non-university learning institutions. If about 4000 students are added to take care of those registered for higher education outside the country, the GER in higher education comes to about 4.1%. This is a significant increase when compared to the situation five years ago as shown in Table 1.

**Table 1. GER in Higher Education for the past five years in Tanzania**

<table>
<thead>
<tr>
<th>Year</th>
<th>2005/06</th>
<th>2006/07</th>
<th>2007/08</th>
<th>2008/09</th>
<th>2009/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>GER</td>
<td>1.22</td>
<td>1.47</td>
<td>2.2</td>
<td>3.0</td>
<td>4.1</td>
</tr>
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</table>

**University outputs/graduates**

This year 2010, Tanzanian universities and university colleges are expected to produce about 20 600 first degree graduates. About 12 120 will be in the field of education, 666 in the agricultural sciences, 731 in
The number of university first degree graduates next year is expected to be over 30,000. All graduates are expected to be absorbed into the economy, thus contributing to the improvement of services and production in all sectors.

There has been a significant increase in student enrolment in higher education. This increase has been attributed to the following factors:

- the increased number of universities and university colleges, i.e. from 22 to 32;
- the expansion and introduction of new programmes in the existing and new universities;
- the establishment of the University of Dodoma in 2007. The current enrolment is 15,142 students, and by 2015 the number is expected to be 40,000;
- access to higher education student loans, i.e. from 42,729 to 72,236 students per year;
- the successful implementation of SEDP Phase I, which has increased the number of secondary schools from 1291 to over 4000 and students enrolment from 630,245 to 1,566,685; and
- the increased public awareness of the importance of investing in education and the acceptance of a higher education cost sharing policy.

Challenges faced by universities and measures being taken

Most of the challenges facing Tanzanian universities are more or less similar to those facing universities in other developing countries. These challenges are complex:

**Inadequate funding**

Although for the past 5 years the annual budgets set aside for higher education have ranged between 21% and 26% of the total education budget, which accounts for about 18% of the total national budget and 5.3% of GDP (BEST, 2010), most Universities only get about 20 - 30% of what they normally request annually. This has retarded institutional development and led to the dilapidation of infrastructure due to the lack of repairs and regular maintenance. While the Government intends to address this problem through the recently developed Higher Education Development Programme (HEDP), universities are also being encouraged to generate and compete for more funds from other sources.

**Inadequate qualified staff**

The increased number of institutions and academic programmes have led to the increased number of students, from 37,667 five years ago to 118,951 in 2009-10. This has led to demands for more teaching staff in both public and private universities. For example, currently there is a demand for over 6000 staff but there are only 4722 teaching staff, i.e. 3384 in public universities and 1338 in private universities (DHE, 2010). The majority of staff in universities (60 - 70%) are in the junior ranks below lecturership level. New universities depend heavily on part-time lecturers from a few public universities. This type of staff profile threatens the quality of education being offered by our universities. Because there are so few senior staff, only a few universities are offering postgraduate programmes, especially at PhD level. Where such programmes are offered, students take a long time to complete their studies due to the heavy workload of supervisors.

The Government is aware of this situation and that is why, as a short-term measure, it has allowed universities to recruit qualified new staff, both internally and externally, to train staff internally and
externally, and to set aside staff training funds. In 2010-11, for example, about US$1.3 million has been set aside from the government budget for training staff locally and abroad. This is in addition to staff-development programmes under different development partners and World Bank support programmes. Universities are also being allowed to recruit retired professors on contract, and are encouraged to improve the teaching and learning environment so as to attract staff and retain the already employed staff.

**Dilapidated infrastructure and aging teaching facilities**

Most of the infrastructure in all universities (with the exception of UDOM) is over 30 to -40 years. The same applies to teaching and learning facilities which are old and outdated. A recent survey shows that about US$414 million is required to rehabilitate 10 public universities and another $452 million for putting up new infrastructure in the same institutions (to match the student population) for the next 10 years. The government, through the Higher Education Development Programme (2010), plans to address this problem in order to accommodate the increased number of students and the new academic programmes in universities.

**Increasing student fees**

Due to high running costs, universities are forced to increase student fees. Due to the cost-sharing policy, rich students pay for their higher education while poor students in both public and private universities are given loans by the government in order to meet the training costs. Strategic programmes, which include science, technology and education, are given priority when issuing loans to students. Also, as a way of encouraging and attracting more students to take science programmes, students are given 100% loans. So far about 130,000 students have benefitted from student loans since 2005-06. This excludes about 48,000 students who were issued loans between 1994-95 and 2004-05.

**Aging and retirement of senior staff**

Due to freezing of employment in all public sectors, between the late 1980s and early 2000s, most of the universities are now experiencing a big gap between the newly recruited young staff and the ageing senior staff. Most of the senior staff in universities (over 80%) is older than 50 years and in some institutions, like the University of Dar es Salaam (UDSM), over 70% of their full professors, are retired professors that are on contract. Junior staff that has recently been recruited, the majority still on training, constitute 60 - 70% of the total staff members (Abeli, 2010). While the government is looking for a long-term solution to this problem, universities will have to continue recruiting, training and mentoring the newly recruited staff for at least another five to ten years before this gap is filled.

**Brain drain and poor retention schemes**

Low salaries and unattractive incentive packages have resulted in some staff taking up employment in other sectors both internally and externally. For example, over the past 20 years Sokone University of Agriculture has lost over 90 senior staff to other institutions, while at the UDSM over 50 senior staff are on leave without pay (Abeli, 2010). Although salaries for university staff have been relatively increased, more needs to be done to attract and to retain more qualified staff. Improvement of staff retirement packages is one of the recent measures taken by the government to address the problem of staff exodus.
Inadequate Research funds
Because of poor links with industries and the under-developed private sector, most universities rely on external donors for research funds. Realising the contribution of research to development, the government has decided to set aside 1% of the country’s GDP for research and development. Universities, being the main actors in this field, are expected to be the main beneficiaries of this fund, which will be accessed on competitive basis. Since the government contributes to regional and international organisations, universities are normally encouraged to compete for international and regional research funds like the Lake Victoria Research Initiative (VicRes) under the Inter-University Council for East Africa (IUCEA).

Gender imbalance
Although the current average female ratio in higher education is 35%, this gender ratio is still lower and more pronounced in science and technology programmes. Measures being taken to address this problem include; awareness campaigns in secondary schools to encourage female students to take science subjects, taking affirmative action like lowering cut-off points for female students for admission, conducting pre-entry programmes for female science students who do not meet the minimum university admission requirements, and awarding best female science student achievers.

Weak linkages amongst Institutions
Weak links amongst Institutions normally lead to unnecessarily expensive programmes being offered, and to the under-utilisation of resources. The government, through the World Bank, supported the Science and Technology Higher Education Project (STHEP), plans to connect all 128 higher education institutions and research institutions in the country into a network so that they can communicate and share resources in a more efficient way.

HIGHER EDUCATION AND DEVELOPMENT IN TANZANIA
The key, for Tanzania to be a middle income country with a diversified and semi-industrial economy is Higher Education. Higher education is necessary if the many problems related to poverty, people’s well-being, infrastructure, sanitation, diseases and health, water, the environment, food security and agriculture, and good governance are to be addressed. Higher education graduates produced each year have been employed and continue to be absorbed in various sectors of production in order to improve services and productivity. Sectors where higher education has improved productivity and service delivery include the following:

Agriculture
Higher education graduates in agriculture have been employed to formulate agricultural policies and programmes aimed at improving, not only productivity but also the marketing of agricultural products. Such policies have also led to the development of improved crop and animal breeds, added value to agricultural products, and improved the design of tools and equipment. Developed and implemented agricultural programmes have not only improved productivity and farmers’ income but have contributed to poverty reduction and economic development in general. Implementation of the recently inaugurated Kilimo Kwanza Initiative, which aims at improving the current agricultural growth rate from 4 - 8%, will indeed need and depend on trained agricultural experts with a higher education.
Engineering

Engineering graduates have designed and supervised construction works ranging from highways, dams, bridges, mining, irrigation, machines and buildings to whole industries. Proper design of these infrastructures has led to low unit cost of production, improved productivity and environmental sustainability. The success of the manufacturing industry, whose contribution to the national economy is supposed to increase from 8.6 - 15%, will depend on the number of trained and skilled members of the labour force in engineering technology, with a higher education.

Education

Universities are expected to produce 12,120 graduate teachers this year. Most of these graduate teachers will be absorbed in secondary schools and a few in teacher training colleges. Their main contributions to the country’s development will be to prepare secondary school leavers to access higher education, and to enable teacher training colleges to produce more primary school teachers. The more teachers available, the better the chances of improving the Gross Enrolment Ratio at all levels of education (106% at the primary level, 50% secondary and 10% higher education) by 2015. The higher the GER (especially in higher education), the better the country will be able to participate actively in regional and international co-operation.

Health

Medical doctors and other health practitioners have offered, and continue to offer, health services and research in diseases like malaria, tuberculosis and HIV/AIDS, which contribute significantly to poverty and low productivity. With more investment and more trained personnel in the health profession, the more the country can expect to have a healthy population capable of producing and contributing to economic development. In order to attract and encourage more students to study medicine, the government gives grants to all students pursuing medicine and dentistry degree programmes and 100% loans to other health programmes.

Business and Finance

Graduates in economics, business, management, accountancy and commerce normally formulate economic, business and management plans which are used to manage the sustainability of the economy. Financial institutions, headed by higher education graduates, have played and continue to play significant roles in controlling the economy, even during the global financial crisis.

Law

Lawyers, advocates and magistrates interpret laws, monitor the judicial system and offer legal services to the needy in order to ensure fair and timely justice. They also promote and advocate for human rights and democracy in the country.

Research and technology

All higher education institutions and research and innovation centres require their staff to have a minimum higher education qualification. Experience shows that the more staff with higher education, the greater the number of publications, research outputs and innovations. It is no wonder that the government has decided to set aside 1% of the GDP for Research and Development since in this era of science and technology, knowledge and technology are considered to be the main drivers of economic growth. Also starting this year, the government plans to promote research and publications in universities by ranking and rewarding institutions with the best research output.
Decision makers
Since good leaders have to be both visionary and knowledgeable, and be able to make informed decisions, higher education is normally used as a key criterion for appointing leaders in high decision-making organs. With this in mind, in his first Cabinet of 64 Ministers in 2006, President Kikwete appointed almost all (91%) of his Ministers with higher education. Of these, 85% had first degrees or Advanced Diplomas, 70% Masters’ and 25% PhDs, and 15% were dons, or university teachers (Maelezo, 2006). Likewise, in the outgoing Parliament (2005-2010), of 323 members, about 75%, had higher education qualifications; PhDs (11%), Masters’ (23%), Bachelors/Advance Diploma/Postgraduate Diploma (41%). Although there could have been other factors which contributed to the good performance of these two decision-making organs, higher education is definitely one of the key factors.

Governance
More leaders with higher education, have led to good governance, which has resulted in peace, democracy and harmony in the country. Good governance and peace have led to both local and foreign investments in the country, resulting in the creation of more jobs in the local population.

CONCLUSION
As noted already, Tanzania is amongst the countries with low GER in both higher and tertiary education. It is 114th out of 132 countries in terms of the Knowledge Index (KI) scale. KI, which for Tanzania is 1.4 (out of 10), measures the level of education, the use of knowledge, innovations, and the application of Information and Communications Technology (ICT), in the production and service delivery sectors (World Bank, 2008). Since the universities’ main role is to generate knowledge, which is used in innovations and in the use of ICT, more resources need to be invested or directed to universities if Tanzania is to improve its ranking in terms of knowledge, innovation and ICT application.

Since realising the importance of higher education in development, it has recently been given priority in almost all national development programmes and in the ruling party election manifestos. Higher education, for example, has been given prominence in Kilimo Kwanza, which intends to transform the current peasant agriculture into modern agriculture; National Development Vision 2025, which aims at transforming Tanzania into a middle-income country by 2025 and National Strategy for Growth and Poverty Reduction (MKUKUTA, 2005), which aims at improving income and poverty reduction. For these programmes to be implemented successfully, they need good and committed leaders as well as skilled and well-educated manpower with higher education.

The development of the Higher Education Development Programme (2010) intends to address most of the current challenges facing universities so that they can play their roles effectively and efficiently. The government realises that higher education, research and knowledge are key to the country’s sustainable development, well-being and dynamic transformation. Together they constitute, what is termed the productive power for other sectors (Muchie, 2009).

In conclusion, for Tanzania to fulfil its goal of becoming a middle-income country by 2025, it has to invest in higher education, as the theme of this workshop advocates. The choice of the topic, the timing and the venue (UDSM) couldn’t have been better. The Government of Tanzania commends the SARUA management for choosing Tanzania to be the host of this very important workshop. We wish you fruitful discussions and constructive deliberations during your two day meeting at the University of Dar es Salaam.
REFERENCES


FUNDING IN HIGHER EDUCATION: TRENDS AND POSSIBILITIES

– Pundy Pillay

THE HIGHER EDUCATION FINANCING CONTEXT

In Africa in general, and in the Southern African Development Community (SADC) in particular, the analysis of higher education financing issues is critical to enhancing access and equity. Currently access and equity are unacceptably low. Moreover, access is highly inequitable in terms of gender, location, and socio-economic status. Higher education financing policies must act to address this twin challenge of access and equity.

A related issue concerns the relationship between higher education and development. There needs to be a greater recognition, on the part of African policy makers, of the growing importance of higher education for development in its broadest terms (that is, economic, environmental, and social). Recognition of the increasing importance of higher education in developing countries will lead to greater attention being paid to how higher education can and should be financed.

It is evident that participation in higher education in sub-Saharan Africa (SSA) is low in both absolute and relative terms. Of 23 SSA countries for which data is available, only Mauritius and South Africa have a Gross Enrolment Ratio (GER – usually taken as a proportion of the age group 18-24 years) in double figures. Amongst these countries, the GER ranges from 0.4% in Malawi to 15% in South Africa and 34% in Mauritius. The average GER for industrialised countries varies between 60% and 70% and that for developing countries around 16%.

In addition to low participation rates, access to higher education is highly inequitable. There are three important determinants of inequity: gender, socio-economic status, and region. In almost all SSA countries, with the possible exceptions of Mauritius and South Africa, women have substantially lower participation rates. Moreover, where women have managed to enter higher education, their participation is often concentrated in so-called traditional ‘women’s’ disciplines such as the humanities and education, rather than in commerce, engineering and science.

Secondly, access to higher education is often dependent on one’s socio-economic status. In many SSA countries, participation in universities and other higher education institutions is dominated by students

3 Pundy Pillay is an economist and consultant working on education and other social-sector issues. This paper is drawn largely from the author’s contribution to the SARUA publication Towards a Common Future: Higher Education in the SADC Region (SARUA, 2008), titled, Higher Education Funding Frameworks in SADC.
from the highest income groups. Often, public funding mechanisms act to exacerbate such inequities by providing free higher education to the ‘best’ students, who invariably come from the wealthiest households.

Thirdly, in almost all SSA countries, participation in higher education is skewed in favour of students from urban and metropolitan areas. Students from rural households face enormous barriers to accessing higher education in general, and the higher quality higher education institutions (HEIs) in particular.

**The main barrier to access: poor and inadequate schooling**

Access and equity in higher education in SSA are fundamentally determined by access to, and the quality of secondary education. In the past two decades, most SSA countries have pursued a policy of Universal Primary Education (UPE) although not all of them have succeeded in this goal. One critical outcome of UPE has been the vast increase in primary school leavers seeking secondary education. In countries such as Kenya, Mozambique, Uganda and Tanzania, the capacity to absorb anything more than a small proportion of primary school leavers in the secondary school system is extremely limited. In the light of this limited capacity of secondary schooling in the public sector, households have had to seek places in a growing fee-paying private system, often of poor quality in most African countries. In addition, large numbers of children drop out of schooling after the primary phase. Participation rates in secondary education in SSA are at best only about half of the developing country average.

In addition, in the richer countries of SSA, such as South Africa, where participation rates in secondary education are much higher, there is substantial differentiation in the quality of primary and secondary schools. In these countries, factors such as socio-economic status and the region of origin act to determine access to better quality secondary education and eventually to better quality higher education.

**Public commitment to Higher Education spending**

As a percentage of total national income, spending on education by most countries in the East and Southern African region is relatively high in a comparative sense. In fact, in countries, such as Lesotho (10% of national income), Kenya (6%), and Namibia (8%), public expenditure on education is especially high.

However, public spending on higher education as a proportion of the education budget varies substantially between the countries considered in this report, ranging from a low of 10% in Madagascar to 40% in Lesotho.

Where higher education expenditure is low, there are often several reasons for this. Firstly, there may be generally inadequate expenditure on education as a percentage of the government’s budget. Secondly, where education expenditure may be considered to be adequate or reasonable, there are considerable political pressures ensuring that the schooling sector gets the overwhelming share of the public sector’s commitment to education. Thirdly, in many developing countries, in a situation of serious resource constraints, there is often keen inter-sectoral competition for financial resources from health, housing, social welfare and other government functions. Finally, the case for increased higher education financing has not been helped by the low prioritisation of this sector by many African governments. The value of higher education for economic growth and broader social and sustainable development has not yet been fully recognised by African governments.
Higher education policy is becoming increasingly important on national agendas. The widespread recognition that higher education is a major driver of economic competitiveness in an increasingly knowledge-driven global economy has made high quality tertiary education more important than ever before in both industrialised and in developing countries.

In developing (including African) countries, investment in higher education is necessary for a number of reasons including the following:

- The role of higher education is changing dramatically with increased globalisation. The multi-modal patterns of economic development (that is, primary sector activities as well as ‘knowledge economy’ activities) suggest an increased role for higher education; these multi-modal patterns are being adopted in many developing countries (e.g. China, India, South Africa, and Mexico).
- There is increasing evidence that the ‘social returns’ on higher education have been consistently underestimated, and hence the benefits to the society of higher education.
- One way in which higher education can benefit society is through its impact on economic growth. With more citizens acquiring higher education, it is possible to achieve higher levels of ‘increased value-added’ growth. This is possible, inter alia, because higher education enhances the capacity of countries to absorb, create and diffuse technology, a vital ingredient in the economic growth process.

Some Common Themes

It is evident that higher education financing in the countries considered in this report is often inadequate, and almost everywhere inequitable and inefficient.

Even though participation rates remain low, in the context of a growing population, enrolments are growing everywhere in absolute terms, in several cases quite dramatically. In the face of serious financial resource constraints for higher education, education ministries have responded mainly in two ways. Firstly, there has been a clear shift towards some form of cost-sharing in the form of tuition fees in countries such as Namibia, Zimbabwe and Zambia. In some countries (for example, Tanzania, Zambia, Zimbabwe) this has taken the form of a dual-track system where a fee-paying system co-exists with a free, government sponsored scheme for some students. Secondly, governments, in virtually all countries, have permitted the introduction and the subsequent expansion of the private education sector.

While the cost-sharing and private sector strategies have enabled the government to address, to some extent, the issue of inadequate public sector funding of higher education, it has almost everywhere resulted in greater inequity. In Zambia and Zimbabwe, for instance, cost-sharing, unlike in Namibia and South Africa where everyone pays tuition fees, is only for those who cannot access government sponsorships. These sponsorships invariably go to those students from more affluent households who are able to access the best schools. However, both Zambia and Zimbabwe have adopted some measures to address these inequities through adopting quotas for the disadvantaged, and Mozambique provides scholarships to students from rural areas.
Furthermore, private higher education in Africa, unlike in the industrialised world, appears to be where many of the poor seek access. However, in several countries especially Mozambique, Tanzania, and Zambia, many of the private HEIs are of questionable quality. Moreover, the situation is not helped by the absence of an effective regulatory framework for private higher education in most countries. Furthermore, in most SADC countries, private higher education institutions, unlike in the industrialised world, are for-profit institutions.

A further dimension of private sector expansion is the entry of overseas providers of higher education in several SADC countries (e.g. Zambia). While these providers may help to address capacity gaps in higher education provision, many of the countries in which they are operating lack the necessary regulatory capacity to effectively monitor quality.

In some SADC states, such as for example, Mozambique, Namibia, Tanzania, Madagascar and Zambia, higher education financing is extremely inefficient. This is due partly to the fact that higher education financing is largely ad hoc, and is not based on any attempt to develop a closer link between sectoral planning and budgeting. In some cases budgeting is done on a purely incremental basis and in others, solely on inputs (student numbers).

Inadequacy of funding for higher education is often a consequence of weak departments of higher education within Ministries of Education. In several SADC countries, there is a an inability and/or unwillingness to make the case for more funding of higher education in the face of politically stronger schooling and other departments within the ministry.

There is moreover a widespread lack of planning and oversight capacity in these departments of higher education. This sometimes results in universities spending more than they have been allocated or building up huge debt burdens (e.g. Zambia).

Inefficiency of higher education expenditure has been exacerbated by the absence in most countries of a systematic funding mechanism such as a funding formula. Most countries rely on incremental budgeting processes (for example, increases linked to inflation) rather than developing a funding formula that would be able to ensure greater predictability in the budgeting process and ‘certainty of revenue’ for HEIs. Such predictability would also be enhanced by the development of closer links between education planning and the budgetary process, the latter ideally comprising a three-year Medium Term Expenditure Framework. Very few countries, with South Africa being a notable exception, have established the necessary planning capacity for higher education in the Ministry of Education, and/or appropriate budgetary frameworks for the country as a whole.

A major aspect of inefficiency in expenditure relates to the manner in which so-called loan schemes operate in several countries. In Botswana, Lesotho, and Tanzania, for instance, governments operate loan schemes for higher education students. In practice, however, these have been scholarships for study in both local and foreign institutions, as no serious efforts have been made to collect such loans. In practice, therefore, higher education has been free. It has also been inequitable as the students who access these loans are often from the most affluent households.
In several small countries, especially Botswana, Lesotho, and Mauritius, limited capacity has resulted in substantial resources being spent on education outside the country. In Mauritius, the costs of overseas study are borne by private households. In Botswana and Lesotho, however, the costs have been carried largely by the state. While there are clearly high private returns to individuals, the social benefits to Botswana and Lesotho more broadly (through, for example, returning graduates, remittances) have not been quantified, but the cost to the taxpayers has been high.

Internal inefficiency (as reflected in high drop-out and repetition rates and poor quality of outputs) is also a consequence of poor academic salaries resulting in poor quality of teaching and/or poorly motivated staff.

In several SADC countries (Lesotho, Tanzania, and Mozambique), there is significant external donor involvement in higher education financing. The long term implications of this for the government are considerable.

**GOOD PRACTICES**

It is evident that the overall picture of higher education financing in the SADC countries, with a few notable exceptions, is characterised by inadequacy, inefficiency and inequity. Nevertheless, there are several examples of good practice that member countries may want to study and possibly emulate.

**Financing practices that address the inadequacy of public expenditure**

- **Private-Public Partnerships**: To address the issue of scarce public resources, Botswana is establishing a new university on a private-public partnership basis. In this model, the state will provide substantial funding for capital expenditure while the private sector will be responsible for operational expenditure. A similar venture has been created in Zambia through the establishment of Mulungushie University.

- **The differentiated government funding model in Mauritius**: In Mauritius, not all public institutions are funded in the same way. Where there are seen to be high private returns (e.g. the University of Technology) the state provides proportionally lower funding as opposed to institutions providing higher education with greater social returns (e.g. teacher education).

- **Cost sharing**: Several countries have recently introduced cost sharing in the form of tuition fees to address the inadequacy of institutional revenue. This is particularly so in Namibia, Mauritius, Zimbabwe, Zambia and Tanzania. South Africa has always had a system of fee paying in higher education. However, not all countries apply cost sharing equitably because of the dual-track tuition programmes (e.g. Zambia, Tanzania and Zimbabwe).

**Financing policies that address equity**

- **Provincial scholarships**: Mozambique provides scholarships to poor students from rural areas.

- **Loans to students in private higher education institutions** – for example, Botswana and Tanzania – in both cases (in Tanzania until 2007-08 when cost recovery began) these are effectively grants but they enhance equity because the proportion of students going to private education are often from the lower socio-economic groups.
• **Loan schemes to address access and equity**: South Africa’s national student loan scheme is designed to attract larger numbers of historically disadvantaged students into higher education. Although there is some controversy about how disadvantage is defined, the scheme attracts a high level of funding from government, operates at a high level of efficiency in terms of cost recovery, and uses means-testing to ensure that loans go to those who are at the lower end of the socio-economic spectrum.

**Financing policies that address efficiency**

• **Linking higher education planning to budgeting, for example, South Africa** – In South Africa, as reported earlier, there is a close link between planning (at both the institutional and system levels) and funding. HEIs are required to submit three-year ‘rolling plans’ to the government as part of the state’s planning and Medium Term Expenditure Framework budgeting process.

• **Funding to improve quality of educational provision**: Mozambique provides a funding facility, the Quality Enhancement and Innovative Facility, an initiative to reward both public and private institutions and individuals for the development of quality enhancement programmes.

**SOME POSSIBLE LESSONS**

It is inevitable, given serious public resource constraints, that the higher education sector must look at alternative mechanisms for generating funding to enhance access and equity. Among the funding mechanisms that need to be considered are some form of cost-sharing and the development of loan schemes that promote access and equity and are efficient in terms of cost recovery. A third issue relates to the development of a funding formula for higher education that can promote the more effective utilisation of scarce financial resources and enable governments to achieve broader objectives of the higher education system (e.g. appropriate human resource development).

**Cost Recovery**

Cost sharing can take a number of forms:

• The introduction of tuition fees where those did not exist;
• A rise in the level of tuition fees where those already existed;
• The creation of a special tuition paying track for a proportion of students;
• The imposition of ‘user charges’ (e.g. registration fees) for recovering the expenses of some previously heavily subsidised institutional services (such as meals and accommodation);
• The reduction of student grants or scholarships;
• An increase in the effective cost recovery on student loans (e.g. through a reduction of the subsidies on student loans);
• The limitation of capacity in the highly subsidised public sector together with the official encouragement of a tuition dependent private tertiary education sector.

The case for cost sharing can be made on several grounds. There are several rationales for students and families to share the costs of tertiary education with taxpayers. The arguments often used to make the case for cost sharing are: (a) public money available for tertiary education is lacking in light of enrolment
growth and competing priorities for public funds; (b) those who benefit should contribute to the costs of tertiary education; (c) public savings from individual contributions can be channelled to improve equity of access; and (e) tuition fees introduce the virtues of price as a market mechanism.

However, there may be a number of technical aspects which make the realisation of cost sharing in developing/poor countries more challenging. This is essentially related to two aspects. First, the split of the cost (i.e. the share that the students/families and the government each should pay) is difficult to establish in any precise way because the magnitude of tertiary education externalities is very difficult to measure. On the other hand, cost sharing, to be compatible with access and equality of opportunities, must be accompanied by measures which remove financial barriers to entering tertiary education at the time of the enrolment decision, especially for the more disadvantaged groups. This requires robust student financial aid systems typically formed of need based grants and loan schemes, and possibly other programmes to compensate for unequal educational opportunities at the secondary level.

However, the implementation of student assistance programmes is hindered by aspects such as:

- Difficulties in determining the extent of need of students (or families);
- Problems of recovering costs from graduates in the form of loan repayments;
- The need for a substantial initial investment to launch a loan system based on public funds;
- The absence or limitations of private capital markets for student loans to complement the limited amounts of student lending from available public schemes;
- The absence of a sufficiently affluent middle class that can afford tuition fees would require substantial investments in financial assistance to students (and families), often not readily available from the public budget.

A third dimension includes arguments of a strategic nature. It broadly relates to the assumption that the political acceptance of cost sharing disadvantages tertiary education relative to competing claims on public money. The two main arguments are as follows:

- Assuming that tertiary education has greater ability to supplement its public revenue with private revenues (not necessarily limited to cost sharing) places it at a great disadvantage relative to other social areas (such as basic education, health, or welfare) and makes the reduction of dedicated public funds politically easier.
- While a policy of cost sharing combined with student financial aid might target resources better, politicians might give lower priority to the development of the student aid system than to the expansion of cost sharing (e.g. higher tuition fees).

Clarifying what government wants from its funding is likely to be of great consequence. The question of what the government wants for its funding support is fundamental to the whole endeavour, yet in many countries there is no clear reasoning behind any particular level of funding other than the most general social, economic, and tax-equity rationales. Often too little attention is paid to using funding processes to address concerns about the relevance of tertiary education, including meeting the emerging societal and economic needs.
Developing an efficient and equitable loan scheme

Important lessons can be drawn from the South African (and Kenyan) experience with regard to designing and implementing an effective student loan scheme. It is encouraging to see Namibia moving towards developing a loan scheme but there are no such signs elsewhere in SADC. The South African and Kenyan schemes are specifically designed to address issues of equity even through there is criticism of the Kenyan scheme because it does not provide adequate loans to poor students in the private sector.

Developing a higher-education funding formula to promote more effective utilisation of financial resources and attain higher education objectives

The funding framework developed in South Africa in the post-apartheid era re-conceptualised the relationship between institutional costs and government expenditure on higher education. This framework is seen as a distributive mechanism, that is, a way of allocating government funds to individual institutions in accordance both with the budget made available by government and with government’s policy priorities.

The funding framework developed for higher education in South Africa has a number of important implications for equity and efficiency and these are repeated below.

1. **Predictability:** Implementing a formula-driven approach ensures a level of predictability, particularly with regard to ‘certainty of revenue.’ Institutions are aware of the factors driving the formula and will know, within certain parameters, the magnitude of resources that will flow to them over a certain period. Such certainty undoubtedly enhances institutional planning.

2. **Recognition of a hard budget constraint:** The new funding framework is driven by the availability of public resources for higher education rather than by the costs of provision. The various mechanisms in the framework come into operation only after government has determined (a) the total of public funds that should be spent in a given year on higher education and (b) what services should be delivered by the higher education system.

3. **Promoting institutional autonomy and equity:** By using a mixture of block and earmarked grants the formula achieves both these goals. Block grants confer a degree of freedom of use of funds by institutions while earmarked grants by definition are directed towards the attainment of specific goals such as equity – for example, in research development, and through foundation programmes for the historically disadvantaged.

4. **Efficiency incentives: the formula-driven framework provides for this in a number of ways**

   - The block grant component rewards efficiency of outcomes in research. Grants are based on the output of publications, master’s and doctoral graduates. Research grants are moreover, not based on a pre-determined monetary amount but against benchmarks based on academic capacity.
   - Inadequate research performance by the system as a whole will result in surpluses of funds allocated for research. These funds provide a further incentive to stimulate output in that they are distributed on a pro-rata (output) determined basis.
Outputs and Inputs: The formula is designed in such a way that it rewards the output of certain categories of graduates more than it does others (for example, professional bachelors’ degrees as against other bachelors’ degrees). Such a funding mechanism enables the government to stimulate the development of skills that are in short supply. As with research, teaching output funds are determined not by pre-set amounts of funding but are developed through a set of benchmark graduation rates, based on the National Plan for Higher Education. In line with this, the formula promotes differential funding in line with the country’s human development needs (for example, agriculture, and health sciences as against librarianship and psychology).

Through institutional funding, the framework promotes economies of scale, and thus lowers institutional unit costs.

5. **Equity** is enhanced in a number of ways:

- Earmarked funding inter alia, for capacity building, research development and foundation programmes for the historically disadvantaged
- Institutional funding for students from historically advantaged backgrounds; and
- Institutional funding for small institutions, especially those in rural areas.

Given the South African experience, key practical actions that other SADC countries adopting a funding formula should take note of are

- **Simplicity:** Design a formula that is simple and that can be understood by the broadest section as possible of the higher education community.
- **Promote understanding and acceptance** of the formula by institutions through designing appropriate consultative mechanisms and undertaking training programmes.
- **Develop effective data-management systems** at both the institutional and government levels to ensure that the formula (particularly with respect to the input and output elements) can be implemented effectively.
- **Higher education labour market linkages:** Design an effective system to monitor the outputs and outcomes of the higher education system in relation to the needs of the labour market and the economy.

In conclusion, both policymakers and policy implementers need to take note of the following key issues in the context of higher education financing:

- The changing nature of higher education provision, which calls for a role for both the state and the market;
- The need for alternative funding sources in the light of severe state funding constraints; and
- The need for more effective higher planning and budgeting at both the system and institutional levels, to ensure efficient and effective use of limited financial resources.
FUNDING HIGHER EDUCATION INFRASTRUCTURE INVESTMENT: THE CASE OF WITS UNIVERSITY

- Patrick FitzGerald⁴ and Spencer Hodgson⁵

ABSTRACT
Responding to a range of imperatives and stimulated by partial government funding, the University of the Witwatersrand embarked on a programme of infrastructure expansion that has exceeded expectation. A number of factors underpin the mobilisation of this R1.2bn programme, including the following:

- The vision of an improved campus for students, staff and society.
- A leadership focus on fundraising and alternative financing mechanisms.
- Optimism tempered by rigorous budget control and cash flow management.
- A programmatic approach to delivery supported by governance structures to integrate diverse stakeholder objectives within an overarching academic and spatial vision.
- Dedicated project management ensuring consistent delivery, monitoring and reporting.
- A commitment to innovation and value-based contractual arrangements that reward performance, promote collaboration, long-term relationships and improving delivery.
- A culture of continuous value engineering to ensure that all projects remain within budget.

The paper builds on the presentation made in August 2010 and highlights lessons learned in the programme’s evolution from its first R60m project in 2007 to the present scale of delivery, with expenditure approximating R1m per day.

Keywords: leadership; financing; innovation, delivery, improvement; value

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⁴ DVC: Finance and Operations, University of the Witwatersrand, South Africa. Email: Patrick.Fitzgerald@wits.ac.za
⁵ Director: Capital Projects, University of the Witwatersrand, South Africa. Email: Spencer.Hodgson@wits.ac.za
INTRODUCTION

Wits University traces its roots back to the South African School of Mining, which started in the diamond mining town of Kimberly in 1896. In 1904 it transferred to the newly established city of Johannesburg and in 1922 was granted university status. It is now a fully comprehensive, research intensive University, ranked number two in South Africa and in Africa. It aspires to be ranked globally amongst the top 100 universities by 2022 when it will celebrate its centenary anniversary. Today the University comprises seven insular clusters of disciplines on two separate campuses spread over 440 hectares with over 250 buildings. It is the owner of Sterkfontein (part of the Cradle of Humankind World Heritage Site), Wits Rural Facility, Wits Donald Gordon Medical Centre (specialist hospital), a theatre complex and a Planetarium.

The infrastructure need

Through its early existence and the decades of apartheid Wits catered primarily to a relatively small white population. Up to the 1960s its student population never exceeded 5000. The 1994 transition to democracy opened the hallowed doors of learning to all races and propelled an unprecedented enrolment growth. By 2000 the student population had grown to 18 000, expanding to 29 000 in 2010 and expected to reach 30 000 by 2012.

Enrolment growth has resulted in a dire shortage of classrooms, laboratories, offices and residence accommodation. Space carved out to accommodate growing undergraduate enrolments has also impinged on the capacity of research institutes, programmes and units. Some of the University’s infrastructure was ageing and out-dated. This includes much of the Western half of its Braamfontein Campus, formerly the Milner Park Showground, which is separated from the original campus by the M1 motorway. Acquired in the middle 1980s, the showground infrastructure was hastily converted to University purposes.

Lack of appropriate space has also constrained opportunities for improved service and, indeed, for the exercise of important responsibilities. For example, Wits owns and looks after significant collections of African artwork, which languish in its basements and are rarely displayed to the public. Many of the short courses offered by the University were forced to take place in rented accommodation resulting in lost revenue and increased cost to the public.
In addition to space constraints, the University has had to respond to other infrastructure imperatives, including refurbishment and modernisation. It has invested across its campuses in data connectivity and uninterrupted power supply systems. In areas of demonstrated research leadership it has managed to attract infrastructure funding from other sources such as the National Research Foundation, which is supporting construction of a R14m Paleontological Centre.

**Opportunity and challenge – Government funding, 2007-09 and 2010-11**

In early 2007, when the Department of Education provided a first three-year allocation of infrastructure funding to universities, Wits had already conceptualised and commenced fundraising for a range of projects. Amongst these were projects prioritised by the Vice Chancellor and known as the Big 5. Wits University was well positioned, therefore, to submit proposals for three of these projects, which qualified for partial funding within the category of science and engineering (the priority disciplines identified by government at the time). By September of 2007 Wits was ready to commence construction on the expansion and refurbishment of the FNB building in an estimated value of R62m, providing two large state-of-the-art teaching venues (450 and 350 seats each). By late 2008, the R70m contract for expansion of the Chamber of Mines Engineering Building was awarded and less than a year later the R178m Undergraduate Science Centre went on site.

To implement these projects Wits was challenged to raise a total of R132m to augment the DOE contribution of R203m. At the same time it continued to fundraise for the two remaining Big 5 projects, namely the Wits Art Museum (R68m), which is now under construction, and the new Public Health Building (R140m), which will start on site in October 2010.

Late in 2008, the Department of Education signalled its intention to allocate a second tranche of partial funding for 2010 and 2011 across a broad range of disciplines, including student accommodation. Institutions of Higher Education were required to bid for a total of R3.2bn, of which R2.6bn was allocated to Universities and the balance to Universities of Technology and Comprehensive Universities. Relevant projects would need to demonstrate the ability to raise the enrolment and throughput rate. Universities would be required to contribute between 25% and 50% of combined total project costs, depending on the DOE’s assessment of the institution’s financial capability. After careful consideration Wits decided to apply for funding to an amount of R400m (12% of the total available allocation). The final DOE grant to Wits amounted to 10% of the eligible allocation to Universities. This was a result of several factors, namely: Wits’ academic capability in Science, Engineering, Health Sciences and Education, well motivated projects, and its demonstrated track record on the 2007–09 projects. Funding was ultimately approved in September 2009, by the newly established Ministry of Higher Education and Training (DoHET).
DoHET and Wits Council approved project budget and infrastructure projects for 2010/11 and 2011/12

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<tr>
<td>5 Masters and Doctoral in life &amp; physical sciences</td>
<td>33.0</td>
<td>17.6</td>
</tr>
<tr>
<td>5.1 Refurbish Humphrey Raikes Building (Chemistry)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2 Refurbish Physics Building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3 Refurbish Oppenheimer Life Sciences Building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4 Research equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Student Housing</td>
<td>358.3</td>
<td>70.0</td>
</tr>
<tr>
<td>6.1 Parktown Village – private finance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2 Sunny Side Residence extension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Teacher training</td>
<td>50.0</td>
<td>32.0</td>
</tr>
<tr>
<td>7.1 Lecture Theatre A (500 seat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.2 Lesideng refurbishment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.3 Lesideng addition</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>717.9</td>
<td>268.7</td>
</tr>
</tbody>
</table>

Wits’ decision to commit R640m was based on a substantial portion of this amount (R430m) being funded as a bank loan for new student residence accommodation. The financial viability of the scheme to deliver 1200 new beds at affordable student rentals depended on a Government funding injection of R60m. This meant that Wits’ actual cash commitment of R210m had geared a total infrastructure programme of over R900m. Together with the 2007–09 commitments; Wits’ fundraising challenge amounted to R348m, gearing a total of R1.2bn.
Location of projects funded with the support of DoHET

University of the Witwatersrand, Braamfontein Campus (East & West Campus)

University of the Witwatersrand, Parktown Campus (Management, Education, Health and Residences)
ORGANISATION, GOVERNANCE AND CAPACITY

As early as 2007 the University Council raised concern about the institution’s capacity to deliver the growing portfolio of capital projects, which also included the development of an R80m short course centre, as well as over R50m investment in Generator Houses and an ongoing upgrading programme comprising numerous projects ranging from R1m to R4m. Management had to convince Council that it could raise the required matching funds and could effectively manage and govern such a large scale construction programme.

Under the leadership of an experienced practitioner (seconded by the construction industry) Wits reconstituted its Capital Projects Programme and established governance structures that have proved extremely effective in integrating the necessary stakeholder consultation processes with the line function responsibility for project development and delivery.

Line function and project consultation

The Capital Projects Programme manages the delivery of projects as a line function responsibility, reporting to the Deputy Vice-Chancellor: Finance and Operations. It also co-ordinates project development, ensuring consultation between the design team and relevant University clients throughout the project delivery cycle. In 2008 the Programme established dedicated project management capacity to enable state-of-the-art contracting and delivery strategies as well as budget and cash flow monitoring and reporting.

Integrating client aspirations

For each project, a Project Steering Team is established to co-ordinate consultation around the needs and aspirations of users and faculty stakeholders. An academic project champion is assigned to drive effective stakeholder input in the development of the project brief as well as project fundraising, which is a line function responsibility of the DVC:

Managing consultation and delivery to achieve function, time, cost, quality and performance
**Advancement and partnerships.** The Capital Projects Programme integrates stakeholder engagement with project design and management, ensuring adherence to budgets, policies and timelines.

**Integrating the University’s overall needs and aspirations** across all projects is directed by the Capital Projects Steering Group comprising

- the Vice Chancellor (ex-officio) and the Director Special Projects in the Vice Chancellor’s Office as well as three Deputy Vice Chancellors, namely
- DVC: Academic, (Chairperson),
- DVC: Advancement and Partnerships,
- DVC: Finance and Operations,
- Director: Campus Development and Planning,
- Director: Capital Projects Programme,
- Director: Development and Fundraising Office

Together with academic project champions, the Capital Projects Programme reports to this Steering Group, which meets three to four times per annum and approves and monitors project budgets, design briefs, implementation timelines and project fundraising progress. This leadership structure plays a critical guidance role, inspiring confidence, mobilising resources and moderating expectations.

**Drawing on University Expertise**

The Programme is further informed by several working groups and committees, meeting approximately every two months, including:

- Campus Planning and Development Working Group
- Capital Projects Finance Working Group
- Space Allocation Committee
- Infrastructure for teaching Working Group
- Energy and sustainability Working Group

**INNOVATION TO ACHIEVE DELIVERY AND VALUE**

Early in 2008 the Capital Projects Steering Group approved the recommendation to establish a competent full-time project management capacity. Tenders were invited resulting in a two-year renewable contract with the service providers, who are permanently based on campus with domain knowledge of the University, its academic rhythm, its structures and procedures. The decision has enabled the streamlining of project processes, effective budget control, monitoring and reporting. Importantly it equipped the Capital Projects Programme with the confidence to adopt a pioneering procurement and contracting strategy that has led to greater certainty in project cost outcomes and has yielded improving construction performance and efficiency.

**Adopting an innovative procurement and contracting strategy**

South Africa’s established construction procurement methodology is based on a traditional and outdated model inherited from colonial Britain, which commenced a programme of comprehensive reform in the late 1980s. The essential drawback of the methodology is that it separates the design and construction processes, making the design consultants responsible for the design, specifications and Bills of Quantities, which are then used to invite tenders from prospective contractors. (It is probably
the only manufacturing process that fails to draw on the knowledge and experience of constructors at
the design stage.) Tenders are then awarded, often to the lowest bidder, setting the scene for adversity,
claims, budget overruns and poor performance.

Using the New Engineering Contract (NEC) adopted in the UK reform process, the Capital Projects
Programme selected the Target Cost contract option that has been used by some South African clients
on large-scale, repetitive infrastructure projects like pipe-laying. To our knowledge, Wits is the first
South African client to use this contracting strategy on building contracts, which have a wider and more
complex range of activities. It was a decision taken, therefore, in full knowledge that a steep learning
curve would be required by the project management and design teams as well as by prospective
contractors. And, indeed, the decision was met with some scepticism, by the industry.

The NEC form of contract demands a proactive approach to project management. The Target Cost option
of the contract is designed to promote solution-oriented collaboration between the role players. The
key mechanism for achieving this is the establishment of a target cost, based on the principle that any
cost savings or over-runs will be shared by the client and the contractor. With this embedded principle
of ‘shared gain and pain,’ the focus of the contracting parties is no longer on apportioning blame, but
on finding solutions.

It is not the focus of this paper to unpack the model in detail. However, it is important to note that the
target cost is based on the contractor’s actual costs plus a tendered mark-up. During the construction
period, payment is based on the detailed assessment of the contractor’s real costs. This is a labour
intensive process that redefines the role of project cost management. Importantly, once tendered on this
basis, the exacting cost management procedures satisfy governance requirements for a re-appointment
of the winning bidder on future contracts, provided the client is satisfied with performance. Thus, the
award of contract establishes a ‘Framework Contract,’ which may last for a period of three to five years
before it is again necessary to test the market. Wits has recently tendered the new Public Health Building
in order to establish a second Framework Contract on its Parktown Campus.

Programmatic improvement and the innovation in contracting methods have required expert advice
and an ongoing capacity building process for all involved in the projects. But the establishment of a
collaborative and long-term contractual relationship has brought substantive benefits to both the
client and the contractor. Some of these are highlighted below on the basis of Wits’ recent project
experience.

Chamber of mines engineering building – 4th Quadrant (R70m target project cost)
Unlike the traditional contacting method, the target cost contract relies on full and complete design
documentation which allows the contractor to price all programme activities. Many (if not most) cost
over-runs on traditionally procured building projects, including South Africa’s 2010 stadiums, are the
result of incomplete design and the concomitant allowance of provisional sums. Completed in April
2009, this ‘pay-as-you-go’ phenomenon was experienced on the Wits FNB Building (Wits’ first DOE
project), with the full cost of budget overruns only becoming apparent when it was too late to take
corrective action.
Built in the late 1980s, the Chamber of Mines Building was left incomplete due to lack of funds, rendering it largely dysfunctional. The completed construction of its 4\textsuperscript{th} Quadrant has delivered a suite of new engineering laboratories and related facilities that respond to our planned growth in Engineering enrolments, graduation and postgraduate research. In September, 2010, we will commence the reconfiguration and refurbishment of the building in line with the 2010-11 DoHET project approval. The 4\textsuperscript{th} Quadrant represented the second DOE supported project and the first to use the target cost strategy. The project commenced on site in January 2009 and was completed within budget in February 2010 by the same contractor who had also won the tender for the FNB Building.

**Chamber of Mines 4th Quadrant – handed over and within budget**

During this first target cost contract, Wits adopted a non-negotiable stance on construction health and safety and has collaborated with the contractor on a programme of continuous improvement that has yielded a comprehensive change of culture. We have now embarked on a similar joint programme to improve quality management.

**Wits Science Stadium (R178m target project cost)**

Since mid 2009 Wits has pursued a continuous process to value engineer this project in an effort to bring costs within the approved control budget of R178m. This has posed particularly tough challenges as the project involves the complex provision of large undergraduate science teaching laboratories and the equally complex conversion of the existing Charles Skeen Stadium into large lecture venues and tutorial rooms. The project will deliver the following facilities:

- A total of 1100 bench spaces in three laboratories (Chemistry, Physics and Biology), each equipped with supporting services, storage and preparation facilities
- Five large state-of-the-art lecture venues accommodating 1570 students, with capacity ranging from 250 seats to 450 seats
- Twenty tutorial rooms providing a total capacity for 830 students.
The target cost framework contract used on the Chamber of Mines 4th Quadrant enabled the negotiated appointment of the framework contractor, who was invited to participate with the design team in the value engineering and design development process. To date this ongoing process has brought estimated project costs down from R201m to approximately R184m. With careful management we are optimistic that final costs can still be reduced to within the approved control budget. This is a critical objective given that the DOE contribution of R110m leaves Wits with a daunting funding challenge of R68m.

To enable an early start on site (November 2009) the project team adopted a two-staged contract approach with a first stage target cost of R40.5m for the demolition, civil engineering and structural work. In March 2010, completed design work enabled finalisation of the target cost for the remainder of the project, which is scheduled for completion in March 2011. An approach of this nature, with efficiencies of both time and cost, would have been impossible using traditional procurement methods.

The Wits Art Museum (Estimated cost R68m)
The design for the Wits Art Museum dates back to an architectural competition that was concluded in 2004 with the winning project design estimated at the time in the cost of R58m. Since then, cost escalation has increased the estimate to R68m with private sector sponsorship lagging well behind this target. With diminishing hope of bringing the project to fruition, some donors began to waver in their commitment.

In December 2009, when potential sponsorship reached a value of R38.5m, Wits brought the framework contractor and the design team together to explore a phased approach to project implementation. A subsequent value engineering process confirmed that a first phase of the Art Museum can be delivered within the existing budget of R38.5m, with full realisation when further funding becomes available. The project went on site in April 2010 – again using a two-stage contract approach. Completion is anticipated in May 2011 and Wits is confident that a functioning facility will stimulate further donations towards the end objective.

FUNDRAISING, ALTERNATIVE PROJECT FINANCING AND DELIVERY
Under the DVC: Advancement and Partnerships, Wits has established dedicated capacity to fundraise for infrastructure expansion. Our experience indicates that successful fundraising demands the sustained effort of academic champions as well as the commitment and conviction of top leadership. Towards the end of 2009, when the Chamber of Mines 4th Quadrant was nearing completion, virtually no funding had been raised to augment government’s contribution of R50m (for the 4th Quadrant) and R30m (for the refurbishment of the existing building). Wits faced a fundraising shortfall of R38.2m. The Vice Chancellor embarked on a sustained campaign in the mining sector that yielded full sponsorship of the outstanding amount by January 2010.

But many academic disciplines do not have the support of such well-endowed sectors of the economy and there is no guarantee of success. As early as 2004, Wits began exploring alternative financing and delivery options, particularly for projects that have the ability to generate revenue and to repay a loan. Options explored by Wits, include:
• loan financing using the University’s own capital,
• private sector finance using varied combinations of the turnkey options, i.e. design, build, operate, finance and transfer.

**Wits Professional Development Hub (R90m short course centre)**
The University of the Witwatersrand offers over 250 short courses across its five faculties. Wits Enterprise is a self-funding, commercial entity that assists individuals, industry and government to access training and contract research from within Wits Faculties and Schools.

Until recently, Wits Enterprise short courses were conducted wherever space was available on campus and often off campus in commercially rented premises. An accessible and advanced centre was urgently needed for both Wits Enterprise and Wits Language School. The vacated ‘College Campus’ Buildings at the north end of the Braamfontein Campus provided an ideal development opportunity, with direct access from Empire Road enabling University outreach to key sectors of South African society.

The combined facility of the Wits Professional Development Hub provides well-equipped teaching and support facilities for close to 1000 students as well as staff facilities, meeting rooms and informal work areas. An automated audio-visual system enables video conferencing, bringing internet and teaching aids into the classrooms and offices.

A compelling business case convinced the University Council to provide loan funding for the extension and refurbishment of the existing buildings and the provision of adequate parking for staff and students. The project was completed in mid 2010 and the loan will be repaid over a 10-year period from the revenue generated by the short courses offered to the public.

**The Parktown Village residence development (R490m)**
Current student residence capacity is limited to 4502 beds, located within 23 residences across the University’s five sub-campuses on the Braamfontein and Parktown Campus, and in Hillbrow. The magnitude of demand and associated construction costs call for an out-of-the-box approach that draws in private sector finance in a cost-efficient way, addresses some of the immediate needs and builds the on-campus residential stock for an improving quality and affordability over a long-term horizon.
The conceptualisation of the Parktown Village project dates back to 2006, when Wits approached the development market for expressions of interest to deliver a privately financed and operated, turnkey project for 1000 new beds on under-utilised Wits-owned land (Erf 815) adjacent to the Parktown Campus. Since then Wits has navigated a huge learning curve, considerably reshaping the original development model into a simpler design-and-build project that is financed by a structured bank loan directly to the University. The loan will be repaid from student rentals over a 20-year period and constitutes Rand Merchant Bank’s (RMB’s) first ever 20-year loan to any institution. All the major banks were approached and RMB was able to offer the lowest interest rate based on a structured loan agreement (with escalating repayments) as opposed to a ‘vanilla’ loan (equal repayment amounts over the entire term).

During the course of the evolving development agreement, two important decisions made by the University contributed to the project’s improved financial viability. The first was to take out a direct bank loan rather than do this through the developer. The second was to retain the responsibility for student rentals and for operating and maintenance costs. These decisions reduced the risk, development fees and profit. At the same time Wits has retained and benefitted from the competency and efficiency of the developer’s management team. There is no doubt that the scale and complexity of this project would have outstripped Wits’ direct management capacity.

The project comprises 14 new two- to three-storey blocks, bachelor units, two-bedroom, three-bedroom and four-bedroom units, providing versatile accommodation for undergraduate and postgraduate students in a comprehensive development that includes the full servicing of the land, green spaces, pedestrian walks and on-street parking. The DoHET contribution of R60.5m offsets the financing costs and consequently brings student rentals to within an affordable level, thus addressing a critical project viability factor. The site currently houses a few low-rise residential buildings with heritage value and accommodates 135 students. Some of the heritage buildings will be used to augment shared facilities such as laundries, study and computer areas, TV and common rooms, as well as housekeeping, cleaning and management offices.

Value engineering of the project design coupled with detailed negotiation has brought the development costs within the rental affordability of comparable student residences. It has reduced the estimate of construction and financing costs from R511m to R490m. The original estimate is set out below:

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property costs</td>
<td>R479,000.00</td>
</tr>
<tr>
<td>Legal costs</td>
<td>R600,000.00</td>
</tr>
<tr>
<td>Funding costs</td>
<td>R4,327,772.00</td>
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<tr>
<td>Construction cost</td>
<td>R304,033,800.00</td>
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<tr>
<td>Professional fees</td>
<td>R35,203,722.00</td>
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<tr>
<td>Management costs</td>
<td>R20,919,343.00</td>
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<tr>
<td>Statutory costs</td>
<td>R3,749,288.00</td>
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<tr>
<td>Promotion costs</td>
<td>R9,073,510.00</td>
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<tr>
<td>Tenancy fees</td>
<td>R31,601,260.00</td>
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<tr>
<td>Financing cost</td>
<td>R44,234,328.00</td>
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<tr>
<td>sundry provision</td>
<td>R9,073,510.00</td>
</tr>
<tr>
<td>Estimated of escalated property costs</td>
<td>R453,778,325.00</td>
</tr>
<tr>
<td>Estimated of escalated property costs</td>
<td>R57,335,110.00</td>
</tr>
<tr>
<td>Value Added Tax</td>
<td>R611,114,338.00</td>
</tr>
<tr>
<td>Construction Area</td>
<td>34451 m²</td>
</tr>
<tr>
<td>Total number of beds in scheme</td>
<td>1199</td>
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</tbody>
</table>

A range of approvals (including ministerial, heritage, rezoning and other statutory approvals) enabled a construction start in April 2010 for completion and full occupancy by the 2012 academic year.
WITS SPATIAL DEVELOPMENT FRAMEWORK – CONTEXT AND DIRECTION

The development of a comprehensive Spatial Development Framework has proved an invaluable tool for achieving consensus on complex and often tough choices – particularly those relating to academic expansion and location opportunities. The need for such a framework became apparent early in the development of the current infrastructure programme. Completion of the spatial framework in 2009 has played a pivotal role, helping Wits to avoid the pitfalls of opportunistic short-term decisions and to adopt a longer-term perspective to growth, re-integration within the city and greater integration between its two campuses and within these campuses.

University design and development framework – Outreach foyers / City integration

The location of the Professional Development Hub and the Wits Art Museum are shown on the above plan as important outreach foyers in the University’s objective to re-integrate itself within the fabric of the City. During development of the spatial framework, the urban design team interacted with the city and was able to identify a range of resonating goals. The process enabled the optimal positioning of bus stops for the new Bus Rapid Transport system (BRT). The framework also provided important direction on the gradation of space, improved pedestrian movement and a long-term approach to vehicular movement and the ever-present parking challenge.

At a project-strategic level, a notably difficult decision was the location of the DOE-supported Undergraduate Science Centre, which is described above. At the end of 2009 we finally achieved a breakthrough in relation to a range of inter-linked problems that impeded design progress. These problems included location and cost challenges for a centre of this scale, the densely built-up nature of East Campus and the insoluble decanting problems that were associated with options explored on this part of Campus that is home to the Science Faculty.
Three factors helped us to reach consensus on a bold move to locate the project to the less-developed West Campus. Firstly, parallel work undertaken on the University’s Spatial Development Framework supported academic expansion in this direction as well as the shift of sport facilities to the campus edge. Secondly, conversion of the existing Charles Skeen Stadium to large lecture venues provides compelling cost and environmental efficiencies. Finally, the prospect gained a critical mass of support when the second round of DOE funding offered further project potential and the medium-term possibility to relocate some schools of the Science Faculty to this part of campus. In the long term, the decisions made will free up space on East Campus for the future expansion of the Faculty of Humanities. Last, but not least, the new Wits Science Stadium enables a giant step for campus improvement. It creates an east-to-west science and engineering precinct and provides a new pedestrian nodal point and a square of distinction that consolidates the inherited Milner Park showground as an integral part of the original University.

CONCLUSIONS

Key modalities for success

Wits University has a long way to go to achieve the required infrastructure and dignity of space to support its aspiration for academic excellence. In recent years great strides have been taken to meet this challenge and a number of factors have contributed to the rapid expansion of the University’s infrastructure delivery programme.

These include:

- A vision and commitment to an improved campus.
- Forward planning – even when funding appeared remote and illusive. In fact, our experience indicates the need for continuous campus planning and development as a permanent capability enabling ongoing technological adaption and the ability to extend capacity during periods of significant infrastructure expansion.
- Expanded infrastructure delivery has required dedicated governance structures to support consultation, financial management, reporting and decision making. Financial discipline has helped to moderate unreasonable stakeholder expectations that can easily escalate costs and limit the potential for other equally important projects.
Government’s injection of partial funding has enabled an attainable gearing of sponsorship funding and loan finance. Fundraising has required dedicated focus and conviction, the championship of leading academics and of the top leadership.

A programmatic, client-led approach to project delivery, backed by competent project management, has enabled a continuous focus on improvement and the paradigm of ‘getting it right every time’.

Innovation
In-house and outsourced competence has enabled bold innovation, including:

- The adoption of value-based contracting strategies: integrating design and construction and optimising delivery efficiency (target cost and framework contract).
- Introduction of continuous value engineering, involving the design team, contractor and academic clients (Wits Science Stadium and Art Museum).
- The gearing of private-sector loan finance (Residence development) and own loan finance (Professional Development Hub).

Commitment (mindset) leading to synergy
An initial pledged amount of just over R200m from the DOE has stimulated the University’s commitment to a capital development programme of over R1.2bn. In turn, this commitment has mobilised the resources of the University and the private sector. Once the governance and management capacities were established and the fundraising drive commenced, other infrastructure projects developed and have found a way forward.

Challenges and reward
The commitment made, has brought with it immense financial challenges that are still with us and require continuous leadership focus. The intervention of the Vice Chancellor succeeded in mobilising donor funds for the Chamber of Mines Engineering Building in the nick of time. The successful completion of the Wits Science Stadium involves the daunting challenge of raising a further R68m, while the Public Health Building is still R20m short of the target cost. As a result of these and other infrastructure investments, Wits’ cash flow and financial reserves will remain under stress until at least 2013. However, as recently as 2008 the University would hardly have envisaged the spectacular infra-structure improvements now under way. These are changing the face of Wits and equipping the University for the future. Despite the financial pain, few voices are arguing that this infrastructure development effort at Wits will not prove worthwhile.
ABSTRACT

This paper argues that the current conventional models of financing public higher education expansion in sub-Saharan Africa, either adapted or currently being implemented in many public universities and university colleges, are not efficiently functioning and cannot cope with the surging demand for higher education, specifically to expand access and improve equity in higher education – the two avowed higher education objectives pursued by many African governments. Within the above context, the paper reviews different financing models implemented in various public universities, mainly as a result of the liberalisation of the public higher education sub-sector as a strategy of implementing neo-liberal economic policies adapted by the majority of sub-Saharan African governments in the context of wider economic and social reforms, pointing out some advantages and challenges inherent in these models. The thesis of the paper is that current models of financing public higher education have so far not had the desired impact on the desired expansion of higher education in sub-Saharan Africa, where participation rates in higher education are lower than average for other developing countries. A new eclectic business approach and innovative models of financing public higher education expansion, including establishing Higher Education Investment Banks (HEIB) to replace Student Loans Boards and Schemes where they exist, are urgently needed to enable public universities and university colleges to cope with the increasing demand for higher education in sub-Saharan Africa.

6 Johnson M. Ishengoma (PhD), University of Dar es Salaam, Department of Educational Foundations, Management and Life Long Learning Studies.
E-mail: ishe2004@yahoo.com, jishengoma@edu.udsm.ac.tz
INTRODUCTION: SOME FACTS ABOUT HIGHER EDUCATION IN SUB-SAHARAN AFRICA

The sub-Saharan African higher education sub-sector is currently characterised by lower than average participation rates for both developing and developed countries; for example, the total participation rate for sub-Saharan Africa (SSA) was 5% in 2005, compared to 17% for other developing countries and 66% for developed countries. The median participation rate in higher education in SSA is 2.5%, compared to the median of 13% for other developing countries and 58% for industrialised countries (World Bank, 2010). The above low participation rates and the increasing demand for higher education have exerted immense and unprecedented pressure on African public universities to increase student enrolments to expand access.

On other hand, public financing of higher education in many sub-Saharan African countries has been declining, as manifested by higher education budgetary allocations as a percentage of respective national budgets and as a percentage of GDP, leading to fiscal pressures with perpetual funding constraints, rising costs of higher education exacerbated by unpredictable and oscillating government budgetary allocations, and eventually shifting the burden for financing public higher education to the institutional level. Against this background and pressure from respective governments to expand higher education provision to widen access, African public universities have precariously adapted various financing models and innovations to expand higher education provision, and also simply to survive. Some of these innovations have worked in individual universities; others have not.

This paper first reviews various financing models which have been adapted by various public African universities, pointing out some limitations and challenges inherent in some of these models or approaches; secondly, the paper proposes an eclectic (business) model for financing public higher education expansion which combines business, market and other elements. The thesis of the paper is that traditional or conventional approaches or models of financing public higher education (relying heavily on government and donor funding) have so far not resulted in the desired expansion of the university sub-sector in sub-Saharan African countries to make these countries more competitive and self-sufficient in high-level human resources critical for their economic and technological development. This situation calls for a new eclectic approach and innovative models of financing public higher education expansion, including establishing Higher Education (Investment) Banks (HEB) to replace Students Loans Boards and Schemes in countries where they exist.

The paper is organised into three sections: section one is an introduction; section two discusses dominant approaches and models of financing public higher education in sub-Saharan African countries, including challenges associated with these models; and section three introduces and proposes eclectic models for financing public higher education expansion, models which have been successful elsewhere but can also work in sub-Saharan African countries. The paper purposely departs from standard papers in the sense that it does not come to any conclusion or make any recommendations, to allow more input and reflection from stakeholders.
Various models and approaches have been adapted by African governments to finance public higher education since independence. The following models, some of which have also been noted by Cheboi (2008), have been adopted by some African public universities and university colleges.

**Full government funding model**
In this model, respective governments took full responsibility of financing higher education from the construction of the education infrastructure to paying for food and accommodation, tuition fees and staff salaries and other emoluments, staff training, research etc. This model, which was popular at independence in many African countries, has hitherto been abandoned in many African countries, mainly because it is inherently unsustainable, but it has clandestinely been re-instated in some countries through student loan schemes in which governments provide interest-free student loans but do not recover the loans, either because of lack of loan-recovery mechanisms or for political expediency or general lackadaisical attitudes towards loan schemes.

**Cost sharing model**
This model, which shifts the burden of higher education costs being borne exclusively by the government or taxpayers, to being shared by the direct beneficiaries of higher education (i.e. students and parents), was adopted in the majority of African public universities in the late 1980s and early 1990s because of financial austerity as a result of economic crisis. The model has incorporated the establishment of student loan schemes and universities undertaking a plethora of revenue diversification activities (income generating activities) to generate the much needed extra income to mitigate declining government funding in these institutions. Ideally, because of the component of revenue diversification – which allows public universities to conduct businesses and behave as business entrepreneurship or business corporations – this model has the potential of transforming African public universities into financially autonomous institutions, and significantly contributing to the expansion of the university sub-sector; unfortunately, this is not happening. In some public universities and other higher education institutions (for example in Tanzania), revenue diversification is almost imperilling the core and fundamental mission of universities because of the tendency of the institutions and staff to concentrate more on revenue diversification activities which are not necessarily in congruence with the core university missions and visions. Some of the challenges to cost sharing, particularly through loan schemes in many African countries, are politicisation and a lackadaisical attitude among its implementers. These two challenges have undermined the potential contribution of this model to sustainable financing of higher education expansion in many African countries. Another critical challenge to the cost-sharing model is the governments’ imposition of the cap on the amount of tuition fees to be charged by institutions, even of privately sponsored students. This means public universities cannot raise sufficient funds to finance their infrastructural development necessary for expansion through this model.

**Privately sponsored students programme model**
This model, which is a variation or a modified version of the cost-sharing model, has been very successful in financing higher education expansion in Uganda (particularly at Makerere University) and in Kenya (at...
the University of Nairobi), where it has been popular, but it is unpopular in Tanzania’s public universities.

In this model, governments sponsor a specific number of students in a public university on the basis of academic merit, and it pays for full tuition. Under the model, universities charge different tuition fees for government sponsored and privately sponsored students, usually charging high tuition fees for government sponsored students. Other students seeking admission into public universities have to pay full costs. As Cheboi (2008) points out, this model has generated additional revenue for public universities in Kenya to enable them to finance infrastructure development. Infrastructure development projects in public universities are a *sine qua non* for higher education expansion. The model has also enabled Makerere and Nairobi universities to get extra funds for staff development and research, and to increase remuneration of academic staff. These benefits have implications for higher education expansion.

However, despite of its great potentiality to finance higher education expansion, this model has the propensity for exacerbating inequities in access to higher education along socio-economic status and regional lines, where it has been fully adapted. This is a serious challenge which limits the efficiency of the model in terms of balanced and inclusive expansion of higher education, versus lopsided expansion. For example, a study by Mayanja (1998) at Makerere University revealed that although privately sponsored places and programmes have expanded student enrolments in Uganda (undergraduate student enrolment expanded from 3361 in 1993-94 to 14,239 in 1999-2000), they were dominated by students from the rich and higher socio-economic status families, and from rich districts and historically advantaged regions. At the University of Dar es Salaam in Tanzania, the findings of a 2009 study revealed that the majority of participants in privately sponsored students’ programmes had businessmen and women as their parents or guardians. In the context of this model, the challenge which should be addressed in the future to make this model work effectively is to make it more inclusive in the sense of being accessible by all socio-economic groups.

**Donor contribution/Support model**

As Ishengoma (2009b) observes, bilateral and multilateral donor aid to public higher education in Africa, despite its unpredictability and precarious sustainability, constitutes a model of its own for financing higher education for expansion, mainly through the support of a capital-development budget for the research and operating costs of the majority of public universities in Africa. The World Bank in particular has been the lead donor to African public higher education through direct aid for multiple purposes, including limited financing of higher education expansion. Table 1 shows the World Bank’s direct aid to African higher education, in recipient SADC and EAC countries, of US$ million from 2001-2006.
Table 1: Direct Aid to Higher Education by African Country Recipient and Commitments, 2001-2006 (US$ Million)

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Amount (Constant 2006 US$ Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>17.4</td>
</tr>
<tr>
<td>Mozambique</td>
<td>16.9</td>
</tr>
<tr>
<td>Tanzania</td>
<td>9.2</td>
</tr>
<tr>
<td>Kenya</td>
<td>5.5</td>
</tr>
<tr>
<td>Uganda</td>
<td>3.8</td>
</tr>
<tr>
<td>DR Congo</td>
<td>2.9</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>2.8</td>
</tr>
<tr>
<td>Rwanda</td>
<td>2.1</td>
</tr>
<tr>
<td>Madagascar</td>
<td>1.8</td>
</tr>
<tr>
<td>Angola</td>
<td>1.8</td>
</tr>
<tr>
<td>Lesotho</td>
<td>1.6</td>
</tr>
<tr>
<td>Namibia</td>
<td>1.4</td>
</tr>
<tr>
<td>Burundi</td>
<td>0.9</td>
</tr>
<tr>
<td>Malawi</td>
<td>0.5</td>
</tr>
<tr>
<td>Botswana</td>
<td>0.4</td>
</tr>
<tr>
<td>Mauritius</td>
<td>0.4</td>
</tr>
<tr>
<td>Swaziland</td>
<td>0.1</td>
</tr>
</tbody>
</table>


While donor aid remains one of the dominant models for financing higher education expansion in many African countries, it has limitations and challenges which constrict its effectiveness in terms of impact on higher education expansion. The first limitation emanates from aid modality. Bilateral, multilateral and private donors prefer to give project and programme aid, either indirect or direct, according to documentary evidence. Indirect aid comprises scholarships, fellowships and other imputed student costs in donor countries’ universities and research universities, and directly benefits these institutions, while direct aid refers to aid given directly to universities and research centres in recipient countries (World Bank, 2010).

One of the limitations of the donor-funded higher education projects in Africa and elsewhere is that they are fragmented, or not synchronised to have any significant impact on the holistic expansion of higher education (Ishengoma, 2009 & World Bank, 2010). The World Bank notes, and we concur, that large projects supporting the higher education sector as a whole in Africa are fairly rare.

In some cases unco-ordinated donor aid in higher education has resulted in undue imbalances in aid inflows, leading to uneven growth of the public universities sub-sector, creating ‘rich’ and ‘poor’ universities, and ‘over-funded’ and ‘under-funded’ departments and disciplines within the same university.
Furthermore, project aid modality as AFRODAD (2007) has the following shortcomings, which also apply to numerous donor funded higher education projects:

- Unco-ordinated interventions by different donors, with each donor following independent systems and procedures for management and evaluation of projects;
- Reduced efficiency and development effectiveness because of fragmented interventions; and
- Lack of synchronisation of interventions among various donors.

The above are the challenges of the donor support model of financing public higher education expansion, challenges which have to be addressed in the future to make the model work through the following strategies:

- Changing the aid modality: give more direct aid;
- Channelling aid to critical areas of higher education expansion, e.g. infrastructure development;
- Synchronising, harmonising and co-ordinating aid in higher education, for example, adopting the current model used by UN organisations in Tanzania, of Delivering as One through One Fund for the whole sector; and
- Adopting Basket Funding Modality for financing higher education expansion.

TOWARDS NEW INNOVATIVE MODELS/APPROACHES FOR FINANCING PUBLIC HIGHER EDUCATION EXPANSION

Against the above background of higher education financing models, which seem not to effectively work to enable African universities expand at the desired pace, this paper proposes the following models for financing higher education expansion while increasing equity and maintaining quality and sustainability in times of financial stringency facing the public higher education sector in the majority of sub-Saharan African countries.

**Business model or market model**

This model has worked very effectively at the University of Nairobi through the University of Nairobi Enterprises and Services Limited (UNES) (Kiamba, 2005), and at Makerere University, but it has yet to be vigorously adapted by other African public universities. It assumes that a university, through corresponding new organisational forms and institutional governance structures, undergoes a significant transformation or evolution from a traditional or development university to an entrepreneurial or corporate university, though without a radical shift from the conventional mission of the university. Transformation in institutional governance from a traditional development university to a corporate model of higher education governance is needed for optimal functioning of this model.

In the model, business practices and principles are injected into the running of the university’s income-generating and revenue-diversification activities through a limited liability company wholly owned by the respective university. The university acts as a parent or holding company, with decentralised centres or organs acting as the entrepreneurial or cost-or-profit centres, with the expectation that they will achieve self-sufficiency from a diversified funding base (Kiamba, 2005).

Inherent in the business model is the emphasis on the identification of the university resources and their potential commercial exploitation, and the assumption that universities have to vigorously market
their services and products, for example, research and consultancy, and inject market principles and market-driven approaches into the financing of higher education to make it completely self-financing (Kiamba, 2005).

While the business or market model of financing public higher education has been criticised and branded as academic capitalism, driving universities into unnecessary entrepreneurial competition (Levidow, 1998), the model, if cautiously adapted can turn around the finances of government and donor dependent public universities and enable them to expand at their own pace. Despite its potential for changing the financing landscape of the majority of the underfunded African public universities, the business model in combination with the cost sharing model remain sustainable and realistic models for financing public higher education.

African public universities can also adapt the following innovative business models to finance public higher education expansion as suggested by Perkinson (2006), albeit in a different context. These models include: bond issues, specific financing facilities for higher education, and credit/unit based tuition fee financing.

**Bonds issues**

Universities, particularly large universities with stable tuition cash flows, and strong track records of sound governance and management, can issue or float bonds in the market which can strengthen the market awareness of the university as a worthy institution for future investment by different investors. Bond proceeds can be used to finance the university’s expansion and modernisation. For example, the University of Diego Portales (UDP) in Santiago, Chile, with a partial guarantee of US$7m from the International Finance Corporation (IFC), launched in 2003, a local 8-year Chilean bond with a face value of US$23m, and obtained proceeds which enabled it to construct three new buildings and refurbish six other buildings, and consequently increased student enrolment from 9300 to 14 000 in 2010 (Perkinson, 2006). Documentary evidence shows that UDP’s bond issue was highly successful and was oversubscribed by around 38% in the local market, raising interest in education sector development among domestic investors. If this financing innovation has worked in Chile, a developing country, there is no reason the approach should not work in African universities, if cautiously tried out.

**Higher education specific financing facilities**

The establishment of a financing facility specifically for higher education institutions is another innovative approach to financing higher education expansion. This facility can provide specific capital loans to higher education institutions to cover, for example, the purchase of new technologies, R & D projects, computer equipment and software, capital purchases of small plant and machinery and lab equipment, and to fund the construction of new campuses. This innovation has been successful in Mexico where, through IFC support, it enabled many higher education institutions to access capital for their necessary expansion (Perkinson, 2006).

**Credit or unit based tuition fee financing**

Charging tuition fees on credit or a unit basis allows payments in smaller amounts to improve affordability of higher education programmes for the many students from poor families who may not have enough cash or access to funds to pay full tuition costs for the whole course at local universities. This approach,
apart from increasing access, creates greater affordability and flexibility by allowing many students to study at their own pace and accumulate higher education credits while working. This innovation has been successful in Vietnam, where in 2005, the Ministry of Education introduced credit based education and training, providing flexibility for students to earn credits towards their degrees at their own pace, and phasing tuition fee payments in small amounts (Perkinson, 2006).

Establishing Higher Education Investment Banks (HEIB) or Higher Education Development Banks

This paper also proposes the establishment of Higher Education Investment Banks by private investors (local and international) or other non-state actors to partner with the governments under Public–Private Partnerships arrangements to replace the Higher Education Students Loans Boards (HESLB), which are currently faltering in many African countries, with the exceptions of Kenya and South Africa. This proposed multi-purpose bank should give loans to individual students, parents and higher education institutions for capital development, charging market rate interest. If feasible, all sub-Saharan African governments can be members of this bank, modelled along African Development Bank structures. Currently, in Tanzania there is one private commercial bank (Azania) which provides limited educational loans payable within twelve months.

The concept of an education bank once worked very well in Nigeria and could be replicated in other countries. The Nigerian Education Bank (now defunct) was established in 1993, after the Nigerian Student Loans Board was dissolved due its gross failure to recover student loans amounting to NGN400m (US$3.34m) by the time it was dissolved (Chuta, 1998).

The roles of the bank were:
• to serve as intermediary in Nigeria’s credit market;
• to harness private sector resources for the funding of education; and
• to take over part of the government’s educational funding responsibilities.

The bank performed the following functions:
• student lending;
• lending for publishing books;
• project funding;
• fund mobilisation;
• provision of advisory services for educational purposes; and
• provision of loans to university faculty for sabbatical leave, for attending conferences abroad, and for book publishing (Chuta, 1998).

The bank was fully subscribed by the Federal Government of Nigeria.
Table 2 below summarises the proposed innovative eclectic model for financing higher education expansion.

Table 2: Innovative Eclectic Model for Financing Higher Education Expansion in Africa

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Financing Mode</th>
<th>Cost/ Budget Item</th>
<th>Level of Financing (% Annually)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities/HEI</td>
<td>Adopt business/market model through RVD activities, privatisation of services, contracted research &amp; confs.; maximise enrolment of private students; bond issues</td>
<td>1, 3, &amp; 4</td>
<td>1=100% 3=5% 5=10%</td>
</tr>
<tr>
<td>Students &amp; Parents</td>
<td>Cost sharing, bank borrowing to pay for tuition fee &amp; welfare costs</td>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td>Government</td>
<td>Direct subventions to universities; HE levy; Higher Education Bank</td>
<td>1, 2,5</td>
<td>Variable</td>
</tr>
<tr>
<td>Private-sector &amp; other non-state actors</td>
<td>Direct donations to universities; contribution of HEB; subscription of bond issues by universities</td>
<td>1, 3, 4</td>
<td>Variable</td>
</tr>
<tr>
<td>Financial institutions &amp; banks</td>
<td>Provision of market-interest loans to universities for capital development; individuals &amp; others; investing in HEB</td>
<td>Variable</td>
<td>Variable</td>
</tr>
<tr>
<td>External donors</td>
<td>Direct grant and aid to universities</td>
<td>1,3</td>
<td>Variable</td>
</tr>
<tr>
<td>Alumni</td>
<td>Direct donations to institutions; establishment of endowments and trust funds/foundations</td>
<td>Variable</td>
<td>Variable</td>
</tr>
</tbody>
</table>

**KEY:** 1=Capital development; 2=Recurrent expenditure; 3=Direct staff training costs; 4=Student direct costs; 5=Other administrative and personnel emoluments

REFERENCES


CRITICAL SUCCESS FACTORS IN HIGHER EDUCATION FINANCE AND PLANNING: AN INSTITUTIONAL PERSPECTIVE

– Yunus D. Mgaya7 and Razack Lokina8

ABSTRACT

Over the past 40 years higher education in Tanzania has undergone massive transformation, especially in the area of student’s enrolment, with major expansion taking place in the last decade. The enrolment increased from 50,000 students in 2007 to over 117,057 enrolled in both public and private universities in 2009/10. Despite the massive increase in enrolment and the increase in the number of public and private institutions of higher learning, a notable trend is the dwindling of funding of the HEI by the government. This to a large extent is threatening the very key mission of the HEI of providing higher quality education. It is for this reason among others that the University of Dar es Salaam, through its ITP, has adopted measures to expand and diversify its internal source of funding to supplement the declining funds from the central government. The measures that have been undertaken include: promotion of effective public private partnerships, reducing operational costs, and the establishment of the Advancement Office. With these measures the University has managed to increase its internally generated funds from TAS2 billion in 2005-06 to more than TAS13 billion in 2009-10. This translates into 15% to more than 53% of the funds allocated by the government to the UDSM. Furthermore with the establishment of the advancement office, the University is expected to tap more financing sources from the private sector, individuals and corporate organisations within and outside the country. With nearly 50 years of existence, the UDSM has enough critical mass of alumni both within and outside the country who can accept the responsibility to give back in support of what they enjoyed in their college years, and who have also acquired sufficient wealth to make significant contributions.

7 Prof. Yunus D. Mgaya, PhD, Deputy Vice Chancellor (Administration), University of Dar es Salaam. E-mail: ymgaya@udsm.ac.tz.
8 Dr. Razack Lokina, Deputy Director – Planning, University of Dar es Salaam. E-mail: rlokina@udsm.ac.tz
INTRODUCTION

Since its inception in 1961, higher education in Tanzania has undergone massive expansion, with a major expansion in student enrolment taking place over the last decade, with a total of 50,000 students enrolled in universities by 2007. A total of 117,057 students are enrolled in higher-learning institutions in Tanzania, both private and public universities, in 2009-10. The country’s projection in Vision 2025 is to have 360,000 students enrolled in higher-learning institutions by 2025. Despite this massive expansion, funding for public Higher Education Institutions (HEI) in Tanzania has continued to come mainly from the government. This is largely due to weak mechanisms of harnessing resources from non-state actors. A similar kind of situation is observed in many other developing countries.

A number of strategies to fund higher education in Tanzania have been implemented; these include the establishment of the Higher Education Students Loans Board (HESLB) and the establishment of the Tanzania Education Authority (TEA). The changing socio-economic and political climate has compelled the government to adopt a policy whereby it serves as a facilitator of economic development and policy formulation rather than a provider of services to its people. Following this change in focus, the flow of resources from the government to public institutions has progressively declined, requiring institutions to diversify sources of financing for planned activities.

Although over 90% of the costs of running higher education in Tanzania (and in the region) are borne by the state, the trend shows that there is a perpetual under-funding of the education sector – the higher education sub-sector in particular. Most of the African countries, including Tanzania, do not reach the recommended allocations of 15 - 25% of government budget to the education sector (or about 7% of the national GDP). In the past ten years the Tanzania education budget has hardly reached 16% of the total government budget. It is only during the 2010-11 budget that the education sector received 16.2% of the total government budget (2010 Budget Speech).

As a measure to increase enrolment with the dwindling government budget allocated to education sector, Tanzania started, in the early 1980s, to admit students on a fee paying basis, focusing mainly on foreign and institutionally supported students. Furthermore, following the structural adjustment programme adopted by the government of Tanzania in the late 1980s and early 1990s, cost sharing was introduced whereby students (and families) became responsible for paying for their own transportation, their application, registration, entry examination and student union fees as well as caution money. This was then followed by the elimination of the student allowance in 1993. In 1996, the Council of the University of Dar es Salaam approved an official proposal for admitting privately sponsored Tanzanian students, and in 2002 it officially recommended that the university fill remaining slots not filled by government sponsored students (who did not have to pay tuition fees) with privately sponsored, tuition fee paying students (Ishengoma, 2005). The admission of the self-sponsored students, like government sponsored students, was also based on the results of the high school examinations. Candidates had to receive principal level passes in appropriate subjects with a total of at least 5 points from three subjects obtained at the same sitting. Tuition fees for the privately sponsored students ranged between TAS600,000 and TAS1,000,000 for medicine and law, respectively.

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10 The recommended optimal financing is as follows: 70% of revenue should be provided by governments, 20% from private sources including tuition fees, and 10% from other income-generating activities – contract research, letting out university facilities etc. Studies in Tanzania show that 5% was raised from own sources and only 10% from student fees.
Furthermore, from July 2005 the government of Tanzania introduced the student loans system, for the 2005-06 academic year to cover tuition fees, other academic fees, room and board fees for all higher education students, whether government or privately sponsored, either in the public universities or self-paying in the private universities. Technically, this meant that the dual track tuition policy was then essentially discontinued. This student loan policy dramatically changed the country’s tuition policy, moving it from a dual-track policy to one in which all students had to pay tuition, albeit deferred as a loan to be repaid once they had finished their studies.

With its more than ten years of the Institutional Transformation Programme (ITP), the University of Dar es Salaam has significantly increased undergraduate enrolment from 3164 students in 1993-94 to more than 16 000 by 2009-10; similarly, postgraduate enrolment increased from 114 in 1993-1994 to more than 2000 by 2009-10. It is, however, noted that only a small part of this growth has been in self-sponsored students despite increased applications and increases in the number of secondary school leavers. The privately sponsored student enrolment increased from 62 in 1998-99 to 1800 by 2006-07. The small growth in self-sponsored students is partly due to the government decision to establish the HESLB, where a student could borrow money through a means-tested procedure.

The issue of higher education financing is important because it underlies much of the three overarching themes of university policy: quality, the relationship between funding and quality in any of its several dimensions; access, or the search for social equity in who benefits from, and who pays for, higher education; and efficiency, or the search for a cost effective relationship between revenues (particularly those that come from students, parents, and the government) and outputs (whether measured in enrolments, graduates, student learning, or the scholarly activity of the academic members).

**Sources and Trends of Financing in Higher Education Institutions in Tanzania**

Higher education in Tanzania, like in other developing countries, is part of the broader tertiary education that includes the entire post-secondary education. The major source of financing the costs of operations in higher education institutions in the country, like similar institutions in other countries, is from government subvention, which in most cases is inadequate particularly for public universities. Other sources of financing higher education in Tanzania include external support, as well as institutions’ own revenues. Institutions’ own earnings include fees (a contribution from students), research and consultancy. Higher education has continued to grow from simply one university to a complex system of more than a hundred tertiary institutions (URT, 1999, 2006). Prior to the 1980s, the higher education sub-sector was a one-tier system with only publicly owned institutions. However, as a result of economic hardship of 1980s, and the Structural Adjustment Programmes implemented by IMF/WB in mid 1980s, there was more engagement of the private sector in the provision of higher education in the country. Currently there are 11 public universities and university colleges and more than 19 private universities and colleges in Tanzania. In terms of enrolment, however, about 75% of the candidates are enrolled in public universities. Furthermore, it is important to note here, that the financing of higher education through public funds encompasses both public and private institutions through the provision of a means-tested, interest free loan to students. This arrangement has led to increased access to higher education by more students.
With dwindling subvention from the government and recognising its pivotal role in producing the highly trained human resources needed for the economic development of the country, UDSM is, through ITP, building a new identity with its own distinctive characteristics in an effort to become a reputable university responsive to national, regional and global development needs. This is attained through constant review of its programmes, improved quality control of its output, and keeping close contact with stakeholders. Furthermore, UDSM aspires to engage in dynamic knowledge creation, inculcating critical thinking in students and staff, and improving the efficient and effective application of ICT in teaching, research and consultancy services. In order to realise these aspirations it is essential that funding levels increase by identifying more funding sources.

As noted in Mwamba and Assad (2007), funding for higher education can take several forms, some of the major ones being:

- Direct government subvention [Personnel Emoluments, Other Charges and Development Expenditure] to all the 11 public universities and colleges;
- Direct bilateral and multilateral donor funding for specific programmes and projects;
- Direct local funding from institutions such as TEA, etc;
- Student financial assistance in the form of scholarships and a loan system for students enrolled in universities and colleges; and
- Self-generated funds by institutions through tuition fees, contract research and consultancy.

**Direct government subvention**

About 25% of the country’s total budget is allocated to the education sector, with about 70% of this going to primary and secondary education. In recent years, however, there has been a significant increase in the Ministry of Education budget from about TAS82 billion\(^{12}\) in 2003-04 to TAS397 billion in 2008-09; this expansion is partly due to the expansion of the student loans scheme (Mwamba & Assad, 2007; TCU, 2009). When compared to 2004-05, the government subvention almost doubled in aggregate terms in 2006-07, the allocation increased from TAS42 billion to more than TAS80 billion in 2006-07, with the largest share allocated to the University of Dar es Salaam, the largest public university in the country.

Figure 1 shows the total government disbursement to some of the Higher education institutions for the period 2008 - 2010. As the figure shows, UDSM has been receiving the largest share of the total allocation. There has been a significant increase in government subvention to almost all the public universities, with the exception of Mzumbe University (MZU) and the Dar es Salaam Institute of Technology (DIT).

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\(^{12}\) TAS = Tanzanian Shilling. Exchange rate: US$ 1 = TAS1450 (July 2010).
Furthermore on the enrolment we see a similar pattern, with UDSM taking the largest share of the high school graduates. This reflects its size and the number of degree programmes that it offers.

Figure 2 shows that almost all universities have registered a significant increase in enrolment, with the UDSM and the relatively new University of Dodoma (UDOM) taking the lead. This reflects the government resolve to increase the enrolment at the higher education institutions.
The fact that a big chunk of government subvention is allocated to UDSM, is again a reflection of its higher enrolment and the number of degree programmes it offers when compared to other higher education institutions. The recurrent expenditures are meant to cover institutional operational items and are composed of two items, personnel emoluments and other charges. Ideally this ought to be related to the volume of activities within institutions. However, in practice this has not been the case. UDSM has been receiving a relatively small amount of funds from the government compared to other HEIs when you consider the level of activity within the University. Although the funding at aggregate level has been registering a significant increase since 2004, from TAS1.2 million to TAS1.9 million per student, the University of Dar es Salaam has been receiving a relatively small amount. In 2005-06 Muhimbili University of Health and Allied Sciences (MUHAS) and Sokoine University of Agriculture (SUA) were allocated almost three times the current expenditure per student enrolled when compared to UDSM. In general, with the exception of Open University of Tanzania, UDSM and UDOM, which are leading in enrolment, have been receiving less per capita funding compared to other public and even private universities. This would suggest that the allocation of recurrent expenditure appears to have no direct relationship with enrolment as a proxy of input, process and output (Mwamba and Assad, 2007). Figure 3 summarises this scenario.
Nevertheless, what is observed shows us that whatever higher education financing strategy is developed, a fundamental reality acknowledged is that the level of government financial support for higher education is not currently sufficient to ensure the financial sustainability of the system as it currently exists. Therefore, reforms in financing higher education still largely target public funds, but in ways that encourage institutions to be competitive and to improve institutional performance.

**International donor support**

For many years international donor support has assisted the development of higher education in Tanzania. Many of the buildings and infrastructure in pioneer higher education institutions have been erected through direct and indirect donor financial support. Similarly many institutional programmes and projects are supported by international donors. For example, for many years now the UDSM has been receiving support from the Royal Norwegian Government, the Carnegie Corporation of New York, the Rockefeller Foundation, Sida, the Ford Foundation, the World Bank and many others. However, UDSM, like many other HEIs in Tanzania, are aware that the external donors’ role can only be strategic and for a defined period. International donor support is now a key component of higher education financing in Tanzania. Table 1 provides indicative figures of flows from international donors to higher education institutions.
As Table 1 shows, the flows to institutions are erratic but it is very possible that sufficient information is not generated on donor funding to institutions of higher education. Overall, the University of Dar es Salaam is receiving the largest share of the donor funding. This kind of funding is often competitive, and institutions have to prepare proposals and argue a strong case for funding. It is a good example of funding that flows as a result of institutional effort, which is a much better way of justifying some proportions of institutional funding.

**Private sector financial support**

The Government is faced with a challenge to expand the resource envelope for funding public expenditure, hence innovative approaches ought to be sought. Experiences from other countries with respect to financing higher education show that government revenue could be increased significantly through efficient or increased targeted taxation. Examples of targeted taxation include a graduate tax, education levy and special telecoms education levy. According to URT (2010), ‘Graduate Tax may be collected as specific tax intended to improve higher education in Tanzania. This may be collected from all Tanzanian employees who are in the public and non-public sectors employment.’ The same study suggests that an education levy be paid out by the private sector that directly benefits from the manpower from the HEIs. It is rightly assumed that, in one way or another, the private sector benefits from the products of HEIs, either now or in the future. A telecommunications levy, on the other hand, is charged at a monthly nominal rate on subscribers of mobile phones and can be tolerated, but yield a substantial sum of money that could augment higher education financing funds. For example, at the current subscription levels, collectable funds range from TAS19.2 billion annually at a nominal rate of TAS100 per subscriber to TAS96.3 billion at a rate of TASS500 per month.

<table>
<thead>
<tr>
<th>Table 1: Donor grants contribution in Higher Education Institutions.</th>
<th>2003/4</th>
<th>2004/5</th>
<th>2005/6</th>
<th>2006/7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TAS. Million</td>
<td>TAS. Million</td>
<td>TAS. Million</td>
<td>TAS. Million</td>
</tr>
<tr>
<td>Sokoine University of Agriculture [Seed Pathology]</td>
<td>344</td>
<td></td>
<td></td>
<td>344</td>
</tr>
<tr>
<td>University of Dar es Salaam [NUFU]</td>
<td>422</td>
<td>852</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUA [Flemish Inter-university Council]</td>
<td>400</td>
<td>465</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Dar es Salaam [Tan-Norway Agreement]</td>
<td>1,500</td>
<td>1,645</td>
<td>960</td>
<td></td>
</tr>
<tr>
<td>University of Dar es Salaam [Sida]</td>
<td>3,185</td>
<td>4,552</td>
<td>3,352</td>
<td></td>
</tr>
<tr>
<td>University of Dar es Salaam [REDET]</td>
<td>577</td>
<td>1,634</td>
<td>761</td>
<td></td>
</tr>
<tr>
<td>Sokoine University of Agriculture [Research Cooperation]</td>
<td>738</td>
<td></td>
<td></td>
<td>3,926</td>
</tr>
<tr>
<td>Mhimbili Univ. College of Health and Allied Sciences Support</td>
<td>1,802</td>
<td>2,001</td>
<td>1,900</td>
<td></td>
</tr>
<tr>
<td>University of Dar es Salaam [Population Studies Research]</td>
<td>161</td>
<td>203</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Mzumbe University</td>
<td>753</td>
<td>900</td>
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<td></td>
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<tr>
<td>Sokoine University of Agriculture [NORAD]</td>
<td>1,105</td>
<td>1,540</td>
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<td>Dar es Salaam Institute of Technology</td>
<td>394</td>
<td>600</td>
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<tr>
<td>Total</td>
<td>6,528</td>
<td>10,402</td>
<td>14,287</td>
<td>14,010</td>
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Though the private sector is an important component of financing higher education, this is an area which the University of Dar es Salaam, in particular, has not tapped to an optimal level given its long existence. Knowing that the external donor’s role can only be strategic and for a defined period, the government has established the Tanzania Education Authority (TEA), from which HEIs including UDSM can access additional funds to buffer deficits in the course of implementation of their core mission. Furthermore, to enhance and diversify its own source of financing major activities, the UDSM management has established an Advancement Office which is charged with attracting funds from individuals and corporate organisations within and outside the country. In the Tanzanian higher education sector, corporate bodies or individuals have not been a significant source of funding for higher education, either at corporate or at individual levels. Individual wealth has been rather limited and corporate charitable giving has not been encouraged. Individual contributors may include alumni and other charitable organisations. It is, however, to be noted that it may take decades before a public university has a critical mass of alumni who have accepted that they should give back in support of what they enjoyed in their college years, and who have also acquired sufficient wealth to make significant contributions. It can be confidently stated that with its 50 years of existence UDSM can be said to have enough critical mass of alumni both within and outside the country.

Self-generated funds and cost cutting measures
Internally generated funds as a source of financing of higher education ought to include private tuition fees, business profit, investment income and net revenue from contract research, teaching and consultancy, joint venture endeavours, and fund raising in support of both academic and administrative functions. The University of Dar es Salaam has been meeting more than 80% of the operational expenses from internally generated funds. This is an area that needs to be strengthened further, given that the government subvention has been declining year by year despite the increase in enrolments. Fund-raising activities have a potential to contribute significantly to the advancement of the institution. However, a major challenge in this area has been lack of a conducive income tax regime. To attract more philanthropic contributions to the HEIs, it may require favourable tax treatment of charitable contributions, which shifts some of the effective burden of such philanthropy onto the government in the form of lost tax revenue (Mwamba and Assad, 2007).

The University of Dar es Salaam, through its Institutional Transformation Programme (ITP), has had impressive achievements especially in the area of expanding student enrolment, ICT capacity and application, and gender mainstreaming. Of particular importance in this context, is the change in organisational structure with a view to making it more cost effective. A big challenge to ITP is limited funding to sustain the already registered achievements during the past fifteen years. Efforts need to be intensified in cost cutting measures in the areas such as rationalisation of health services, the optimisation of use of utilities (electricity and water) and municipal services. Other measures that have been taken by the University in this area are the promotion of effective public-private partnership, reducing operational costs, and identifying other sources of revenue through resource mobilisation. When these measures are achieved we expect to see a release of some the funding to be allocated to other developmental areas. Figure 4 summarises the trend of internally generated revenues at UDSM.
As is obvious from Figure 4, there has been a consistent increase in the internally generated funds at UDSM. The revenues increased from more than TAS2 billion in 2005-06 to more than TAS13 billion in 2009-2010. This is an average growth rate of 15% per annum.

Figure 5: Trend in contribution of internally generated funds as a percentage of government approved budget.
One of the critical success factors in generating own funds at the University of Dar es Salaam is the implementation of the public private partnership (PPP) policy. The Mlimani City Investment is one of the PPP success stories. The Mlimani City Investment project is being jointly developed by the University of Dar es Salaam and a foreign investor, Mlimani GH Group Ltd from Botswana on a PPP agreement. The project aims to construct facilities that can be used to provide various services, including a modern regional shopping centre, housing units, office park, a conference centre with capacity of up to 3000 people, a 4-star hotel, a zoo and a botanical garden. The project represents the UDSM response to the declining funding from government that it experienced in the late 1980s through the 1990s. Through this project the University has managed to substantially increase its internally generated funds to the extent that it is now contributing about 53% of the total annual budget (See Figure 5). This is a remarkable increase given the fact that in the past 5 years it was only able to contribute less than 15% of the government’s approved budget to UDSM. Thus despite the fact that the government funding has been declining, the internally generated revenue has been recording a consistent increase. It is expected that by the time all planned activities are finalised, UDSM will be able to finance a large part of the planned activities from internally generated funds.

Another area where the UDSM has made significant gains is the lease of its land to SEACOM Tanzania Ltd, a subsidiary of SEACOM Capital Limited, a Mauritius Global Business License company. The company acquired a piece of land on which to land its fibre-optic marine cable at Silversands. With this lease of the land, the UDSM benefits with a ready service cable with a bandwidth capacity of STM-1 (this is equivalent to 155 megabits per second). This arrangement saves the university US$124 000 per month, which would otherwise be paid to a commercial Internet service provider. Other investment projects at the university include a fuel or gas filling station, a beach resort (Silversands Hotel), and rentable premises currently occupied by commercial banks, and food and beverage service providers. The university also owns a profitable IT company (University Computing Centre Limited) which offers services to the University and the general public in Dar es Salaam and in four upcountry regions.

In conclusion, the University of Dar es Salaam will continue with its efforts to develop more sources of internally generated revenue to facilitate successful implementation of its core mission.
REFERENCES


