Report of the Ministerial Committee for the Review of the Funding of Universities

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Acronyms (general)

AIMS	African Institute for Mathematical Sciences
ASAF	Arts Science Achievement Foundation
ASSAf	Academy of Science of South Africa
BA	Bachelor of Arts
BChD	Baccalaureus Chirurgiae Dentium [Bachelor of Dental Surgery]
B Ed	Bachelor of Education
B Sc	Bachelor of Science
B Tech	Bachelor of Technology
BUS	Business and Management Sciences
cert	certificate
CESM	Classification of Education Subject Matter
CHE	Council on Higher Education
CHET	Centre for Higher Education Transformation
CPI	Consumer Price Index
devt	development
DHET	Department of Higher Education and Training
dipl	diploma
DoE	[Former] Department of Education
DST	Department of Science and Technology
FCS	Full Cost of Study
FET	Further Education and Training
FFC	Financial and Fiscal Commission
FTE	Full-time Equivalent
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
HAI	Historically Advantaged Institution
HDI	Historically Disadvantaged Institution
HE	Higher Education
HEMIS	Higher Education Management Information System
HEQC	Higher Education Quality Committee
HEQSF	Higher Education Qualifications Sub-framework
HESA	Higher Education South Africa
HRD	Human Resource Development
IBSS	International Bibliography of the Social Sciences
ICT	Information and Communication Technology
km	kilometre/s
MBA	Master of Business Administration

MBChB	Bachelor of Medicine, Bachelor of Surgery/Chirurgy
MHET	Ministry of Higher Education and Training
MoE	[Former] Ministry of Education
MTEF	Medium-term Expenditure Framework
NCHE	National Commission on Higher Education
NCV	National Certificate Vocational
NDP	National Development Plan
NGO	Non-governmental Organisation
NPC	National Planning Commission
NPHE	National Plan for Higher Education
NQF	National Qualifications Framework
NRDP	National Research and Development Plan
NRF	National Research Foundation
NSC	National Senior Certificate
NSF	National Skills Fund
NSFAS	National Student Financial Aid Scheme
ODL	Open and Distance Learning
OECD	Organisation for Economic Co-operation and Development
OER	Open Educational Resource/s
PG	Postgraduate
PhD	Doctor of Philosophy
PME	Performance Monitoring and Evaluation
PQM	Programme and Qualification Mix
RPL	Recognition of Prior Learning
SAICA	South African Institute of Chartered Accountants
SAPSE	South African Post-secondary Education
SARS	South African Revenue Service
SET	Science, Engineering and Technology
SETA	Sector Education and Training Authority
T&L	Teaching and Learning
TDG	Teaching Development Grant
TIU	Teaching Input Unit
TOU	Teaching Output Unit
TVET	Technical and Vocational Education and Training
UG	Undergraduate
UNESCO	United Nations Educational, Scientific and Cultural Organization
WIL	Work-integrated Learning

Acronyms (universities)

CPUT	Cape Peninsula University of Technology
CUT	Central University of Technology
DUT	Durban University of Technology
MEDUNSA	Medical University of Southern Africa
MUT	Mangosuthu University of Technology
NMMU	Nelson Mandela Metropolitan University
NWU	North West University
RU	Rhodes University
SU	Stellenbosch University
TUT	Tshwane University of Technology
UCT	University of Cape Town
UFH	University of Fort Hare
UFS	University of the Free State
UJ	University of Johannesburg
UKZN	University of KwaZulu-Natal
UL	University of Limpopo
UNISA	University of South Africa
Univen	University of Venda
UP	University of Pretoria
UWC	University of the Western Cape
UZ	University of Zululand
VUT	Vaal University of Technology
Wits	University of the Witwatersrand
WSU	Walter Sisulu University

Minister's Foreword

There is widespread acknowledgement that higher education is a major driver of economic competitiveness in an increasingly knowledge-driven global economy. Higher education provides both economic and social benefits for the public as well as for the individual who obtains a higher education qualification. There is a strong association between higher education participation rates and the levels of development of countries. The *National Development Plan 2030* emphasises the importance of a highly skilled workforce as well as innovation for development.

South Africa, like other developing countries, is faced with financial constraints and backlogs in higher education as a result of the growth and wider participation in higher education over recent years. In South Africa the problem is exacerbated by historical disadvantage. The public higher education system in South Africa following the merger of a number of higher education institutions from 2004/05, was until recently made up of 23 public universities with varying degrees of capacity, expertise and resources. Two new universities have been established, to start operating at the beginning of 2014.

The public higher education system in South Africa comprises an array of different universities, ranging from highly developed, well-resourced universities to those that are under-developed universities and constantly face financial difficulties performance challenges. International comparisons reveal that the level of funding available for the higher education system in South Africa is relatively low. It is therefore not surprising that, without exception, all of the country's universities cite inadequate funding as the main cause of the higher education system's failure to measure up to its potential and fully realise the transformation agenda of our country.

While adequate funding of higher education is important, this in itself is not sufficient to ensure a well functioning and quality higher education system. Resources that are available need to be utilised in the most effective and efficient manner. Our universities and higher education stakeholders at times fail to acknowledge the misuse of funds due to mismanagement and corruption. Various independent assessment, administrator and forensic reports over the past few years show some deeply embedded corrupt practices in some of our universities with respect to management of resources. The extent to which these practices are prevalent in institutions that have not been under scrutiny has not been tested. It goes without saying that good and clean governance and management is a critical component of a healthy higher education sector.

The allocation of resources in the higher education sector is underpinned by the 2003 funding framework, which is built on the principle of shared costs between (mainly) government and students. The main feature of this funding framework is that it is a goal-oriented mechanism for the distribution of government grants to individual institutions, in accordance with a) national planning and policy priorities, b) the quantum of funds made available in the national higher education budget, and c) the approved enrolment plans of individual institutions. The funding framework is accordingly an important steering mechanism for achieving policy priorities, the most important of which is the overall transformation of the higher education system. Specifically, the current funding framework was expected to contribute to the realisation of equitable access, better quality of research and teaching, better student progression and graduation rates, and better responsiveness of the higher education system to economic and social needs.

Since the full implementation of the current higher education funding framework from 2007 onwards, various stakeholders have identified a number of weaknesses and limitations in it that called for its review. Criticisms include that the framework distributes resources without taking into account a number of critical factors such as: the cost of running certain programmes, the location of some institutions, historical legacies of the country, the resource- and revenue-raising potential of some universities, and the quality and level of preparedness of students. Despite these challenges, some of our universities are internationally recognised and credited. Others however, especially historically disadvantaged universities, are still far from achieving required levels of recognition despite a number of them having seen improvements over the past few years. Historically disadvantaged universities, which are mainly located in poor, rural areas, serve in the main poor students who are poorly prepared for higher education studies. These students are mostly dependant on National Student Financial Aid Scheme (NSFAS) funding to access higher education, and therefore adequate levels of NSFAS funding are vital to ensure that no student is excluded from higher education on the basis of its affordability.

One of the main purposes of the current review was to determine whether the current funding framework exacerbates the financial challenges of historically disadvantaged universities. I am pleased that this particular problem received due attention in the review and I trust that the recommendations will go a long way towards accelerating the development of these universities, so that they will be resourced to fulfil their proper role in the higher education landscape.

While the Funding Review Committee does not recommend the ‘capping of student fees’, this is an area that I believe requires further attention. The NSFAS budget has increased substantially over the past few years and more students than ever before are benefiting from the student financial support provided by government. However, the increase in the NSFAS budget has been negated by student fee increases that have, in some instances, been higher than inflation; and in a number of universities there have been double-digit increases, with the result that many middle-class families are now struggling to keep up with the rising costs of higher education. Access to higher education is a fundamental basis for economic empowerment; and therefore it is incumbent on us to ensure that student fees remain affordable to allow for greater access for the poor, and for working-class and middle-class families.

The funding of universities must address the plight of disadvantaged institutions while ensuring that the relatively advantaged institutions to remain internationally recognised and competitive. The review identified several challenges that need to be addressed. Of great concern is the fact that the participation rates of African and coloured students in higher education remain low compared to whites and Indians. This is untenable – both from a social justice perspective, and in terms of meeting the demands of the 21st century and the needs of our economy. As indicated in the current report, the realisation of the enormous benefits associated with higher education requires higher levels of participation. Higher levels of funding and the expansion of the capacity of the higher education system will be needed in future to expand access to higher education, especially for African and coloured students.

In my first engagement with the Review Committee, I explained a number of broad principles that had to guide the work of the Committee. These included sustainability, predictability, stability and consistency. A number of our universities are world-class academic institutions at the cutting edge of research in various spheres, while others may be better situated to make teaching their primary purpose. This brings the need for a differentiated university sector to the fore. Both teaching and research are critical for the development of highly skilled academics, workers and researchers, and it is important that both these activities are adequately funded. It is government’s vision that all universities should at least develop research niche areas and that all universities will participate in research and innovation, albeit to various extents. The *National Development Plan 2030* sets out a developmental trajectory that indicates the need for increased levels of research and innovation. Teaching is equally important and it is essential that all universities offer a

high quality undergraduate education and also provide quality teaching at post-graduate level.

The review of the funding framework took place against the backdrop of a global economic downturn, which inter alia affected the funding of higher education in many countries. South Africa has not been immune from this global economic downturn, and in August 2012 all government departments were informed that they had to cut their baseline allocations over the 2013/14–2016/17 Medium-term Expenditure Framework (MTEF). Following consultations with the National Treasury, the budget of higher education institutions was spared the proposed cuts – this amid lower-than-anticipated revenue collection by the national government.

The planned expansion over the next decade must be funded both adequately and intelligently to ensure that our universities improve the quality of their offerings and improve their throughput rates. This review is the first step towards that realisation. The current report is released to stimulate and encourage public debate and meaningful engagement. It is important that this debate be informed by facts, as the report demonstrates two critical points. Firstly, government funding has not kept pace with the growth of enrolments in the system. Secondly, it is often how resources are internally allocated within universities that exacerbates the challenges some universities face.

I have requested that a technical team and reference group be established to carry through the next phase leading to the development of a new funding framework. The technical team's main responsibility will be to model all the recommendations made by the Committee and together with the reference group assess the impact on all universities. They will on the basis of this work develop a draft funding framework/policy for further consultation with the sector. The process should be completed within the next nine months and following that a new university funding framework/policy will be finalised for publication.

It is important to emphasise that the implementation of a new funding policy will be phased-in over a number of years, to ensure stability and predictability in the budgets of universities. However, the weak financial position of many historically disadvantaged universities has necessitated that I take immediate action. I have decided to implement the Committee's recommendation that a 'disadvantage factor', that will take into account the special circumstances of historically disadvantaged universities, be introduced. We have been fortunate that new funding has been allocated from the vote in 2015/16 for enhancing university education. This will be utilised to introduce the new factor into the current framework. As this is new funding, there will be no adverse impact on the budgets of other universities. The aim of this new grant is to ensure that over the short, medium and long-

terms, historically disadvantaged universities improve their levels of development and efficiency. This reinforces the approach that I took for the third infrastructure and efficiency cycle, which placed a lot of emphasis on supporting infrastructure development for historically disadvantaged institutions/campuses. It is encouraging to see from the Committee's report that several historically disadvantaged universities are on an upward trajectory and, with the right government support, investment and oversight, are set to become leading institutions in their niche areas.

All stakeholders must realise that while adequate levels of government funding are central to driving the vision of higher education, public accountability for the use of such funds remains a key priority. The recent amendments to the Higher Education Act and the revision of reporting regulations are all aimed at strengthening how universities fulfil their responsibilities to account for the use of public funds. Following the publication of the Green Paper for Post-School Education and Training in 2010, and the extensive consultations and comments received, a new White Paper for the system was drafted. In November 2013 Cabinet approved the White Paper for Post-School Education and Training. The White Paper affirms the principles of academic freedom, institutional autonomy and public accountability. It is therefore important that the team appointed to model the funding review recommendations takes into account the White Paper as a guiding policy document.

I would like to extend my gratitude to the Chairperson of the Committee for the Review of the Funding of Universities, Mr Cyril Ramaphosa, all the Committee members, the researchers, and the Departmental officials who sacrificed their time and effort towards the realisation of this important report.

Dr BE Nzimande, MP
Minister of Higher Education and Training
27 January 2014

Chairperson's Introduction

Our country's transition from a racially divided society to a democratic and non-racist dispensation ushered in transformation as a key policy imperative. Every sector of our society, including higher education, has since been transforming. Unlike the fragmented, inefficient and inequitable higher education 'system' of the apartheid era, our country now boasts a single, national, and co-ordinated higher education system that is open to all. Enrolments have increased significantly: from 495 356 in 1994 to 938 201 in 2011. Through the establishment and expansion of the National Student Financial Aid Scheme (NSFAS), poor students now have the chance to participate in higher education. University research outputs have increased significantly, and several of our universities are internationally recognised as citadels of excellence. However, these important achievements mask significant challenges that continue to confront the higher education system.

As indicated in the current report, a number of targets set for higher education by the Education White Paper 3 of 1997 (DoE 1997) and the *National Plan for Higher Education* (MoE 2001) remain unrealised. Even though enrolments have increased, the participation rates of African and coloured students remain below 15% compared to those of students from the white and Indian population groups[1] (59% and 46% respectively). The target of 30% enrolments in science, engineering and technology has not been reached. Our university system is largely an undergraduate system, with masters and doctoral enrolments constituting only about 6% of the total enrolments. The low levels of masters and doctoral enrolments are obviously inimical to the development of the next generation of scholars, the sustainability of our universities as vibrant knowledge institutions, and the country's move towards a knowledge-based economy. The levels of internal inefficiency are unacceptable high and about 50% of students who enrol in our universities drop out before graduation. This is both wasteful and unsustainable and calls for all stakeholders – government, universities, student organisations and others – to embark on a concerted campaign to address these inefficiencies.

[1] The current report mentions the racial categories of African, coloured, Indian and white. The term 'black' includes Africans, coloureds and Indians.

One of the first things the Ministerial Committee for the Review of the Funding of Universities ('the Committee') realised was that the needs and aspirations of individual universities far exceeded the resources available to the sector. These needs, however, varied in two broad senses. One set of universities generally sought resources to improve on their current performance, and actualise their aspirations to become global leaders in research and innovation. Another set of universities, predominately historically disadvantaged institutions (HDIs), sought resources to catch up with their counterparts in the former group, in terms of the provision of basic teaching and research infrastructure. Most of these HDIs are located in poor, remote and rural areas. These institutions generally attract the bulk of underprepared and poor students. Some of these institutions are also hampered by management challenges. It is however reassuring that several HDIs are on an upward trajectory and are certain to become leading institutions in their niche areas. While it is important to ensure that all universities are adequately resourced, the significant resource needs of HDIs cannot be over-emphasised. It is for this reason that the Committee recommended a disadvantage factor, which would take into account the special circumstances of these universities. Additional funding will also be required if the situation of HDIs is to be addressed meaningfully. The under-resourcing of HDIs should not be allowed to become a natural form of existence for these institutions. However, for additional funding to have any meaningful impact, the unacceptably high levels of inefficiency in the system must be addressed urgently. The same applies to governance and management, which should be strengthened. Institutional autonomy should not be used as a means of masking inefficiencies, including corruption.

Meeting the resource needs of the sector will require significant additional funding. An analysis by the Committee found that state funding of higher education (in real terms) has been declining over the years. Between 2000 and 2010, state funding per full-time equivalent (FTE) enrolled student fell by 1.1% annually, in real terms. During the same period, perhaps as a response to declining state funding, tuition fees per FTE student increased by 2.5% annually, in real terms. South Africa's funding of higher education, even though significant, does not compare favourably to other countries. In 2011, the state budget for universities as a percentage of gross domestic product (GDP) was 0.75% compared to 0.78% for Africa as a whole, and 1.21% for the Organisation for Economic Co-operation and Development (OECD) countries. Given the important role of higher education in the production of skills, research and innovation, in the mitigation of socio-economic inequalities, and in the realisation of the state's development agenda, the level of funding

needs to improve. However, for additional funding to have any meaningful impact, it is necessary to address the inefficiencies in the system.

Related to the improvement of governance, management and accountability was the Committee's observation of the need for the Department of Higher Education and Training (DHET) to enhance its oversight role with regard to the sector. In the same way as the DHET has been monitoring the utilisation of the infrastructure and efficiency funding, it should implement mechanisms for monitoring the financial stability of universities. It should be possible to identify cases requiring early interventions *before* their situations become worse. This recommendation should not be confused with interference with the autonomy of our universities. Universities can only execute their missions effectively if they are financially stable, and it should therefore be in their interest and for the public good for the DHET to monitor their financial stability and provide the necessary support. Close analysis by the Committee revealed that in some cases the issues were not lack of adequate funding as much as how the resources had been mismanaged. Recent cases whereby some universities have been put under administration due to mismanagement and poor governance, coupled with high levels of inefficiency in the system, do not augur well for the case for additional funding, and the country cannot afford to be putting more resources into higher education if existing inefficiencies are not adequately addressed.

Whereas block grants are important for ongoing institutional operating costs, earmarked grants are crucial for steering the system. The Committee established that earmarked grants have been very successful in steering the system to increase access, and enhance teaching and research outputs, and for infrastructure development. In many of the submissions to the Committee, the high levels of internal inefficiency in the university system, characterised mainly by high dropout levels, were blamed on the under-preparedness of students coming from the school system. Although this is a challenge that should ideally be addressed at the school level, universities have a responsibility to make sure that the students they receive excel in their studies. It is for this reason that foundation programmes were started, and have since performed a critical remedial role for many students who leave school while they are under-prepared for university education. It is envisaged that universities will continue to provide foundation programmes in the foreseeable future, as long as our school system continues to perform sub-optimally. These programmes are important for ensuring the successful participation of students in higher education, hence improving the efficiency of the higher education system.

The Committee learned that the demand for these programmes is currently higher than the funding made available to universities. Additional resources will therefore have to be made available for foundation programmes to be able to address the magnitude of the challenge. It is worth mentioning that the success of the foundation phase is 82%, which shows that adequate academic support is important for under-prepared students.

A number of submissions to the Committee raised concern about inadequate funding for NSFAS, and the race-based formula used by NSFAS to allocate funds to universities. These issues were exhaustively addressed by the Ministerial Committee on the Review of the National Student Financial Aid Scheme, which submitted its report in 2010 (DHET 2010a). Reforming and strengthening NSFAS will go a long way towards ensuring access and participation by many more poor students. Equally, reforms to NSFAS will to some extent address the challenge of student debt at many universities, particularly HDIs.

The increasing demand for higher education coupled with the country's unmet skills needs and desire to become a vibrant knowledge economy will require a significant expansion of our higher education system as envisaged in the *National Development Plan 2030* (NPC 2012) and the Green Paper for Post-school Education and Training (DHET 2012d). The Green Paper speaks of the need to raise university enrolments to 1.5 million by 2030 – a feat that would be difficult to achieve through a traditional bricks-and-mortar approach. Accordingly, the realisation of a significantly expanded higher education system will require the adoption of alternative, cost-effective ways of providing expanded access to higher education. The Committee noted that modern information and communication technologies (ICTs) provide multiple opportunities, not only for expediting expanded access to higher education but also improving the quality of teaching, learning and research. To be able to optimise fully the benefits associated with ICTs, the Committee urges significant investment in ICT infrastructure for both distance education and the higher education system as a whole.

The review of the funding framework proved to be very complex. In addition to the challenging task of working through the many and often competing but sound proposals received during the consultation process, the review process required extensive and intricate modelling, and estimating the financial impact of the various recommendations.

The major challenge the Committee faced was how to balance the need for improved resourcing of HDIs with the need to ensure that the whole system is appropriately resourced in a context of limited state resources. Overall, it is important to ensure that all universities in the system are resourced and developed adequately so as to meaningfully play their strategic roles. Extensive consultation processes were followed during the review. In each instance, the Committee had to weigh the many proposals received against the impact they would have on all universities.

The Committee recommends that the DHET establish a technical team to further determine the exact financial implications of the various recommendations for individual universities and the sector as a whole, and the most cost-effective ways to implement several of the recommendations made in the current report. It is hoped that such a technical team would also develop a migration strategy for the full implementation of a new funding framework that would give effect to the recommendations made in the current report. We trust that the recommendations made by the Committee will go a long way towards resolving the funding challenges facing the higher education system.

On behalf of the Committee, I would like to thank all those who made submissions or presentations to the Committee: universities, trade unions, student formations and the youth leagues of political parties. The current report would not have been possible without their invaluable inputs. I wish to salute all members of the Committee for their utmost commitment and dedication. I am particularly grateful to Dr Mvuyo Tom, who ably stood in for me whenever I could not attend meetings. Mr Shai Makgoba, Ms Brenda Swart, Dr Diane Parker, Ms Jean Skene, Dr Engela van Staden, Mr Chief Mabizela, Dr Rian Cilliers and their colleagues at the DHET played an invaluable role in the success of this review, and to them I am grateful. Mr Tiyani Kubayi, Ms Slindile Ndlovu and Mr Jabulane Zondo were able and enthusiastic ‘foot soldiers’ who made sure that the Committee got all the logistical support that was needed. Mr Kubayi in particular went beyond the call of duty in arranging all the travel for the Committee. I would also like to commend Dr Gerald Ouma, Professor Pieter Vermeulen and Dr Charles Sheppard for providing the Committee with research support. Dr Sheppard was also the principal writer of the report and I would like to thank him for a job well done. My sincere gratitude also goes to the Council on Higher Education for the use of their facilities for most of the Committee meetings. I would like to express my gratitude to my executive assistant, Ms Nonkosi Mngxali, for her support during

the review process. She always made sure that I was well informed about all discussions and engagements when I could not attend due to other commitments.

Finally, my gratitude goes to Minister of Higher Education and Training Dr Blade Nzimande and Director General of the Department Mr Gwebinkundla Qonde, for entrusting me with the enormous responsibility of reviewing the funding of higher education in the country.

Mr Cyril Ramaphosa
Chairperson: Ministerial Committee for the Review of the Funding of Universities
December 2012

Executive summary

Purpose of the review

The overall purpose of the Ministerial Committee for the Review of the Funding of Universities ('the Committee') was to review the experiences of the past six years of partial and full implementation of the current funding framework for universities. The Committee had to develop a set of principles based on the transformational goals as formulated in Education White Paper 3 (DoE 1997) and the *National Plan for Higher Education*, or NPHE (MoE 2001). Based on these principles the Committee was required to analyse the current funding framework, to determine whether it has functioned effectively in achieving the goals set for it at its inception and, in particular, whether it has functioned effectively as a transformation-oriented steering mechanism. Based on the conclusions of this analysis the Committee had to recommend what changes (if any) should be made to the current funding framework, taking particular account of the following: (a) historically disadvantaged institutions (HDIs) and (b) small rural universities. The functioning of the links between the current funding framework and government's other steering mechanisms as set out in the NPHE had to be evaluated, and recommendations had to be made on any changes that might be needed to ensure that the agreed-upon principles are served. In addition, the Committee was required to undertake an in-depth analysis of the human, physical and financial resources available to the university system over the five-year period 2005–09. In this regard, the committee had to analyse shortfalls that have occurred in the resourcing of universities, and report on the efficiency and effectiveness of the university system's utilisation of its various resource categories. The Committee had to develop resource strategies and models that relate to the Department of Higher Education and Training's (DHET) strategic plans for universities and that will ensure that the transformational goals of Education White Paper 3 will be achieved.

Transformational goals for the higher education system

The following transformational goals as articulated in Education White Paper 3 and the NPHE were identified:

a) Goal 1: Opportunities for entry into the system must improve, since social and economic development requires large numbers of students to enter public universities. A gross participation rate of 20% by 2016 has been targeted.

b) Goal 2: The participation of disadvantaged students in the system must increase.

c) Goal 3: The participation of female students in the system must increase. These goals underline the fact that equity requires that access to public higher education be equalised. This means that gross participation rates must be equalised.

d) Goal 4: Science, engineering and technology and business/management enrolments in the system must grow, since these fields are important drivers of economic development. The target is to grow enrolments to reach a proportion of 30% in science, engineering and technology and 30% in business and management sciences.

e) Goal 5: Masters and doctoral enrolments in the system must grow, because knowledge economies require increasing numbers of citizens with high-level qualifications. The target of at least 15% enrolments in masters plus doctoral students has been set.

f) Goal 6: The academic staff in the system must be well qualified. This is based on the fact that there is a strong correlation between the quality of knowledge outputs and the qualifications of academic staff. The original target was that 50% of permanent academics should have doctorates and that 40% should have at least a masters degree. The *National Development Plan 2030* (NPC 2012) raised this target to 75% academic staff with a doctoral degree by 2030.

g) Goal 7: The output of graduates of the system must improve. This target is based on the premise that increased levels of graduate outputs are needed to meet the skills needs of the labour market. The targets that have been set are that in the existing highly inefficient system the growth in total graduates must exceed the growth in enrolments and the cohort completion rate needs to improve to at least 65%.

h) Goal 8: The high-level knowledge outputs of the system must improve. Research outputs in the form of doctoral graduates and research publications are critical if South Africa is to participate in the global knowledge economy. The total research outputs must increase. The targets set are that the ratio of doctoral graduates to permanent academics should be 0.15, and of research publications should be 1.0.

Principles of the funding framework

The Committee identified the following principles that need to underpin the funding framework for universities:

a) The funding framework should enable the state to *steer higher education* in terms of the achievement of specific goals.

b) *Transformation* should be the central tenet of the funding framework and should extend beyond equity and demographic goals, to create a supportive, nurturing, socially and academically cohesive higher education system.

c) The principle of *equity* should be served by linking funding to institutions' core activities, negotiated missions, size, geographic location, the academic needs of specific social groups of students, and historical disadvantage.

d) The funding framework should support successful *transformation, and the dissemination of knowledge and sharing of innovation* that advance social and economic growth and development agendas nationally, regionally and internationally.

e) State funding is directed towards *core academic activities* and is not intended to meet all aspects of institutional costs.

f) There should be *a differentiated university system* steered by funding, where universities attempt to establish their own defining characteristics, which will make specialisation in the university system possible and improve efficiency in resource use.

g) Funding should become more *output oriented* over time, once the system has achieved greater equity.

h) The Committee supports the principle of *cost sharing*. Cost sharing is predicated on the fact that higher education has both public and private benefits. Tuition fees should however not be allowed to compromise the public- and social-good purposes of higher education, and the *strengthening of NSFAS* is recommended as a mechanism for mitigating potential negative tuition-fee implications.

i) Universities should have the *autonomy* to determine fee levels.

j) Expenditure of public funds should occur within a paradigm of *accountability, efficacy, efficiency and effectiveness*. The principle of meeting performance targets

with fiduciary responsibility should be integral to the funding framework, coupled with clear consequences for non-performance. Efficiency should be reflected in improved student progression and completion rates. Accountability should be associated with links between funding and the achievement of agreed outputs.

k) The funding framework should *promote quality and competitiveness*, focusing on both the quantity and the quality of outputs in the context of South Africa's competitiveness in the global knowledge economy.

l) The key *principles of financial stability, financial predictability and transparency* of funding allocations should underpin the funding framework.

m) Funding allocations should enable universities to be *responsive to social and economic needs.*

n) *Co-ordination* and *collaboration* should be *enhanced*. As part of a process of alignment of and with the national planning agenda, the higher education sector could achieve optimal research and teaching outcomes with better co-ordination and collaboration among various ministries that provide funding in a range of forms to the higher education sector. The funding framework should also drive *greater co-operation and collaboration* between *universities* and the *further education and training (FET)/technical and vocational education and training (TVET) sector*, and within the higher education sector itself by funding mobility of staff and students within a differentiated system.

o) The funding framework should *encourage articulation* between different education institutions – for instance, by explicitly recognising programmes in one institution for continuation in another, or by funding joint programme offerings.

Vision for higher education

The vision for higher education for 2030, as defined by the *National Development Plan 2030* (NPC 2012), is as follows:

a) Each university will have a clear mission that sets out its unique contribution towards knowledge production and national development.

b) Universities will be an integral part of the post-school system, and will be well articulated with the school and college system to allow for mobility of learners and staff between these different parts of the education system.

c) Universities will be efficient institutions, characterised by increased knowledge productivity units, throughput rates and graduation and participation rates.

d) The country will have a diverse national innovation system that consists of a range of world-class centres and programmes specialising in areas that address national priorities, including African languages and indigenous knowledge systems. The innovation system will draw on the many sites of knowledge and innovation within society.

e) By 2030, 75% of university staff will hold PhDs. The PhD graduates, either as staff or post-doctoral fellows, will be the main drivers of new knowledge production within the higher education and national innovation systems.

f) Universities will be centres of excellence based on their identified areas of strength, responding to the needs of their immediate environments, the needs of the African region and the requirements of global competitiveness.

g) The university system will be diverse and differentiated, based on the strengths and areas of specialisation of each university.

h) Universities and the national innovation system will be welcoming and supportive environments for black and female students and researchers.

i) Private higher education institutions will play a greater and better-defined role in the higher education landscape.

The higher education system, through its production of high-level skilled individuals, knowledge production and contribution to research and innovation, is a key player in the achievement of the goals and targets of the *National Development Plan 2030* (NPC 2012). It is crucial that the quality of the learning and teaching experiences of the higher education sector be improved to be geared towards the achievement of these goals. The inefficiencies in the system – with regard to low levels of production of graduates at undergraduate level, and more worryingly low levels of production of graduates at postgraduate level – need to be addressed, in order to deliver the skills needed for development. Both the levels and the quality of research outputs must be improved, and the number of masters and doctoral graduates must increase dramatically, in order to accelerate knowledge production and provide the knowledge and innovation needed for the development of the country. A prerequisite for the acceleration of knowledge and research outputs is the improvement of the qualification levels of academic staff at universities. The capacity of the higher education system needs to be expanded to ensure that higher education participation rates are increased dramatically, since there is a clear relation between higher education participation and economic development.

It is vital that the challenges of under-development of some of the universities and the fact that some universities are in constant crisis be addressed, to ensure that they become fully functional and able to contribute at much higher levels to the targets envisaged for the sector. These institutions need to be appropriately resourced and supported to be able to cast off their historical legacies. The concept of a *differentiated system* is emphasised. Differentiation should build on the unique strengths and centres of excellence of each and every university. The funding review should ensure that both teaching and research are adequately funded, and that in the near future as a minimum all universities can offer the same quality learning and teaching experiences at undergraduate level. Planning for the system needs to be enhanced to ensure better alignment with national needs and strategic priorities.

The biggest challenge for the funding framework is ensuring that the existing high-level knowledge-production universities are supported adequately, to ensure that these gains are retained, while addressing the under-development of (especially) HDIs in the system.

Review of the performance of the public higher education institutions

The current funding framework was developed as an instrument to serve the transformational goals for higher education envisaged in Education White Paper 3 and the NPHE. The extent to which we can ascribe the changes described (as well as the degree to which targets have been achieved or not achieved), to the funding framework is contestable, considering the numerous factors involved in realising these targets.

An analysis of performance indicators related to these goals as well as targets set shows that over the period 2000–10:

a) Gross participation rates in the public university system improved from 14% in 2000, to 16% in 2005 and to 18% in 2010. This reflects a considerable improvement, although the target of 20% was not reached in public university education.

b) The gross enrolment ratio (GER) for all race groups improved in the period 2000–10, but the participation rates of the various race groups vary. By the end of the period, the GER for African students was 14%, followed by coloured students with a GER of 15%. The GER of Indian students was 46%, while white students had a GER of 59%.

This is concerning, since the future growth of the system will have to come from the African and coloured population groups.

c) The target for increased female participation was reached, with an increase in GER from 14% to 20%. The GER of male students increased from only 13% to 15%, and is cause for concern.

d) Student enrolments in the major fields of study (especially in science, engineering and technology) did not reach the target of 30%, while business and management science enrolments exceeded the target of 30%.

e) During the 2000–10 period the targets set for masters and doctoral enrolments remained at levels much lower than the 15% target. By 2010, masters and doctoral enrolments constituted only 6% of total enrolments. The percentage of staff with doctoral qualifications will have to increase considerably if the system is to produce more masters and doctoral graduates, since the enrolments in masters and doctoral programmes is dependent on the staff with doctoral qualifications. Bursaries and grants will have to be increased to stimulate the enrolment and graduation of students in masters and doctoral programmes. Since honours programmes are the feeder programmes for masters programmes, bursaries for these students will also have to be increased to improve the output of masters and doctoral graduates.

f) The highest qualifications of academic staff with a masters or doctoral degree improved over the period, increasing from 61% to 71%. This, however, still fell short of the target of 90%.

g) The graduate output of the system improved, with the number of graduates growing at an average annual rate of 5.7% compared to 4.9% in headcount enrolments. There was thus an improvement; but there are various concerns raised with regard to the decline in productivity in undergraduate degrees, as well as masters and doctoral degrees. Dropout rates at both undergraduate and postgraduate levels remained very high, with approximately 50% of students not completing their qualifications.

h) High-level knowledge outputs improved for research publications, but remained more or less stagnant with regard to the production of doctoral graduates. The latter is cause for concern, since these graduates are needed to boost research outputs and to form the basis of a knowledge economy. It can nevertheless be concluded that the funding framework with incentives for research outputs has definitely contributed to an increase in the research outputs of the universities, especially with regard to research publications.

In conclusion: The current funding framework did contribute to improvements with regard to the transformational goals, taking into account that although it was introduced in 2003 and came into effect in 2004/05, it was only fully functional for the period 2007/08–2011/12, as a result of a period of migration[2] from the previous framework. This is a relatively short implementation period for giving effect to all the transformational goals set out. Despite the improvements mentioned above, the system remained a very inefficient one, performing way below most of the targets set. It is acknowledged that not all of the trends can be attributed to the impact of the funding framework; various other factors play a role in the trends observed.

Level of funding of higher education in South Africa

In 2011, South Africa's state budget for universities as a percentage of GDP was 0.75% (DHET 2012g), which is more or less in line with Africa as a whole (0.78%). When compared to OECD countries (1.21%) and the rest of the world (0.84%), South Africa lags behind in this regard. Although South Africa spends a considerable amount on education, *its expenditure on higher education is much lower* than desirable. Higher education expenditure as a percentage of education expenditure for Africa was 20%; for OECD countries it was 23.4%; and for the world 19.8% in 2006 (or closest year). However, in 2011, South Africa's estimated higher education expenditure as a percentage of education was approximately 12%.

If South Africa in 2011 spent the same percentage on higher education as the world did in 2006, the state budget for universities would have been R37 422 million (+- R189 billion multiplied by 19.8%), which is R15 425 million more than the amount that was actually set aside (2011: R21 997 million). The average growth rates show that, in real terms, government funding per full-time equivalent (FTE) enrolled student fell by 1.1% annually between 2000 and 2010, while student tuition fees per FTE increased by 2.5% per year. Based on the differential increases in fee income and government grants, it can be

[2] The impact of the introduction of the new funding framework was smoothed by gradually implementing the new funding framework over a period of three years. This was done to avoid sudden drops or increases in subsidy allocated to a university, by only migrating a certain percentage of change to the subsidy allocation of a university in a specific financial year.

concluded that the amount of government funding is not sufficient to meet the needs of the public university system.

Under-developed universities

The key structural variables responsible for several of the challenges experienced by HDIs include, among others, funding approaches that were inimical to the establishment of a viable intellectual enterprise, remote geographic locations, and insufficient infrastructure. In addition to structural constraints, it has been argued that "agential variables" (mainly poor governance and management) have conspired in the case of some HDIs against any meaningful prospect of their overcoming structural constraints. Acknowledging this dialectical interplay of structural and agential variables is crucial in devising properly targeted funding interventions. The very difficult issue to address is whether the government would be willing to provide additional funding to address the under-development of the HDIs and, if not, what the implications would be if the redistribution of existing funds would have to be considered as a means of addressing this problem in the system. Once all institutions are on a par at undergraduate level, there should be no reason why those institutions could not generate adequate funds to make them financially viable.

Recommendations

1. Level of funding of higher education in South Africa

The Committee makes the following recommendations:

a) Government should increase the funding for higher education, to be more in line with international levels of expenditure. This will enable the system to improve the functioning and resourcing of the universities, especially the under-developed universities. The success of the *National Development Plan 2030* is dependent on the high-level skills that have to be delivered by higher education, and increased participation of (especially) African and coloured students is needed to accelerate economic growth.

b) The DHET should monitor the actual cost of providing higher education, to inform its bids to government for funding allocations for the higher education sector.

2. *Enrolment planning, and over- and under-enrolment*

The Committee makes the following recommendations:

a) The DHET should annually compile data on increases in the volume of activity in higher education – in terms of growth in enrolments, graduates and research outputs – and calculate the additional funding needed, taking higher education inflation into account, for submission to government. The intention would be to achieve full funding of the increase in the volume of activity and to eradicate the phenomenon of unfunded students and outputs in the system. Improvements in performance with an emphasis on improvements in outputs should form part of this bid. It should also include arguments in terms of the desirability of an increased participation rate in higher education in view of a knowledge economy, as well as other arguments with regard to the decline in government funding, rising student fees and the low expenditure on higher education in South Africa compared to other countries.

b) Enrolment planning should remain as a key steering instrument for determining the size and shape of the higher education sector and the institutionally negotiated targets should be linked to the funding of the universities. The practice of funding universities based on a share that is reviewed from time to time should remain, although some changes to the current practice will be proposed. The role of enrolment planning should also include the protection of the unit Rand value of a teaching input unit.

c) Teaching input units – and not headcounts – should be used as the basis for the determination of deviations from approved enrolment plans, since headcounts could be misleading. If an institution enrols more postgraduate students or students in science, engineering and technology (SET) (which is desirable for attaining the national goals) and fewer students at undergraduate level, but remains close to its approved teaching input units, the institution should not be penalised.

d) The institutional share of the teaching input grant should be determined on the basis of three-year approved rolling enrolment plans that result in projected teaching input units based on historical ratios between FTEs and teaching input units per major field of study and qualification level. Based on the trends in actual teaching input units and approved teaching input units, the approved teaching input units of the third year of the enrolment plan should be adjusted with a migration strategy. The projections of teaching input units must incorporate the effect of projected growth rates in the various fields of study as well as differentiated growth rates at various qualification levels, to ensure acknowledgement of the generation of more teaching

input units as a result of higher funding and level weights and to ensure that projections are as accurate as possible. If changes in the classification of education subject matter (CESM) categorisation occur, the impact on teaching input units should be taken into account.

e) Changes in teaching input shares should be done with a migration over a period of at least two – or at the most three – years, to ensure financial predictability for a minimum of two years.

f) Universities that over-enrol considerably should not grow any further but rather maintain their enrolments. This would enable the DHET to move to the full funding of all their enrolments before any further growth in enrolments for such universities were allowed.

g) The agreed-upon teaching input unit targets should be based on an overview of the performance of an institution in terms of outputs; in instances of poor success and throughput rates, growth should be limited to ensure that these universities pay attention to student success rather than merely growth.

h) Growth in the higher education system should be aligned with institutional capacity and available human and fiscal capacity as well as available infrastructure, student accommodation and equipment.

3. Accountability

The Committee makes the following recommendations:

a) The monitoring and evaluation capacity of the DHET – with regard to the efficiency and effectiveness of the funding framework's functioning, as well as the financial health of universities – should be improved. The DHET should have in-house capacity that can contract expertise in, as and when needed, to assist with monitoring and research. As mentioned in the previous section, it is of the utmost importance that the DHET monitor the *actual* cost of providing higher education.

b) A temporary unit (similar to the merger unit)[3] should be created, to develop and monitor strategies as well as to provide assistance in the development of the under-developed universities in the system.

[3] The merger unit oversaw the successful merging of universities with the development of institutional operating plans for a period following the merger and provided technical support to the merging universities.

c) The Minister should establish a Funding Committee to oversee and monitor the funding allocations to universities on an annual basis.

The functions of the proposed Funding Committee would include the following:

- The Funding Committee would make recommendations to the Minister regarding the annual allocations to universities as well as regarding changes that are needed to give better effect to the transformational goals of the university system.
- The Funding Committee would provide the Minister with an annual report on the performance of the universities and the financial health of individual universities. The Funding Committee would make use of appropriate accounting practices to establish the financial health of universities and also recommend appropriate steps to be followed as a preventive strategy for having to place a university under administration.
- If and when changes were proposed to the funding framework the Funding Committee would model the financial impact for individual universities and report back to the Minister.
- The Funding Committee would report to the Minister on the effectiveness and impact of conditional grants and the successful implementation thereof.

The Ministerial Committee recommends that the proposed Funding Committee comprise the following:

- DHET representatives;
- Representatives of the Funding Strategy Committee of Higher Education South Africa (HESA);
- National Treasury representatives;
- Department of Science and Technology (DST) representatives;
- National Research Foundation (NRF) representatives;
- Financial and Fiscal Commission (FFC) representatives;
- Technical data and funding framework expertise;
- Technical accounting expertise;
- Private sector expertise; and
- An economist.

The Funding Committee should be chaired by the DHET. Given that the final decisions with regard to funding allocations lie with the Minister of Higher Education and Training, the aim

of introducing the Funding Committee would be to undertake research and make recommendations that would assist the Minister in making decisions. The capacity of the DHET with regard to evaluation and monitoring would need to be improved, to enable the DHET to provide the Funding Committee with the necessary information to make informed recommendations to the Minister. The Funding Committee should commence its work early enough in the funding cycle process to be able to provide the required inputs in time for the annual Ministerial Statements.

The Committee makes the following recommendation:

d) Any future substantive changes to the funding framework should follow the appropriate routes of consultation as indicated in Chapter 5 of the Higher Education Act (No. 101 of 1997) before any changes to the funding framework are effected.

4. Architecture of the funding framework

The Committee makes the following recommendations:

a) The formula-based approach should continue to be used.

b) Block grants are very important for ongoing operational costs, and earmarked grants are needed to steer the higher education system. Block grants and earmarked grants should be retained.

c) Based on the submissions received and an analysis of both the effectiveness and shortcomings identified, the current principles, goals and overall architecture of the funding framework should be retained, with adjustments that will be recommended with regard to each component of the funding framework.

5. Differentiation of the university system, and funding implications

The Committee supports the following principles for differentiation that were developed by HESA:

a) The most important principle is that the country needs the *entire spectrum of institutions* for socio-economic development. The higher education sector should comprise a continuum of institutions, with the purpose of providing a varied student population with a range of access routes. The social justice and equity agendas need to be addressed by the whole system.

b) A *variety of institutions* are therefore required, to ensure that the sector serves the varied needs of students as well as the national interests. The mix and level of programmes of any institution should not be cast in stone; institutions must identify and enhance their strengths.

c) All universities in South Africa must offer *quality undergraduate education*.

d) The university system does not exist in isolation. It is an *integral part of the post-school system,* and inter-institutional and inter-system mobility for students and staff must be an integral part of the system.

e) There is a need to *reward equally the different roles* of higher education in South African society, namely: teaching and learning, research, and community engagement. It is important to note that the aim is to continue to support the strengths of research-intensive institutions, and also to recognise other important functions of higher education institutions.

f) A *national plan should be developed in tandem with differentiation* – meaningful differentiation will need serious co-ordination, and differentiation needs to be accompanied by an appropriate funding regime, including funding for poorly resourced institutions. Differentiation must be linked to the government's long-term *Human Resource Development Strategy for South Africa* (HRD-SA) (MoE 2009b) and its associated 20-year time horizon.

The Committee supports the principles flowing from the HESA workshop on differentiation and makes the following recommendations:

a) All historical backlogs should be eradicated within the short to medium term at under-developed universities, to enable all universities to offer the same quality undergraduate teaching and learning experience. The prioritisation of HDIs within the infrastructure and efficiency allocations is needed to give effect to this.

b) The Committee acknowledges the role that knowledge production, research and innovation play in the development of a nation and recommends that research outputs and research capacity building be adequately funded and encouraged through funding.

c) Each and every university should develop research capacity and should participate in research and innovation, albeit to varying extents. Each under-developed university should develop a niche area, built on its unique strengths, and the development of such a centre of excellence at each of these universities should be supported through the research development funding on a project basis. The

resources of the DHET and the NRF need to be aligned, together with possible donor funding, to give effect to the establishment of these centres of excellence at under-developed universities.

6. Historically disadvantaged institutions

The Committee makes the following recommendations:

a) The financial dispensation of HDIs has to be improved, in view of the extensive challenges faced by those institutions. The Minister should consider introducing an institutional factor grant for HDIs, which should form 2% of the total block grant allocation. This is essential given current economic conditions, where additional funding for higher education might not be realised. Another important consideration for the introduction of an institutional factor grant for HDIs is that in some instances the recommendations put forward by the Committee will have a negative impact on the funding of HDIs. The HDIs are relatively small and a 2% block grant allocation will lead to a 10.2% increase in the block grant allocations of HDIs, which will over time enable these universities to accelerate development.

b) The DHET should continue to prioritise HDIs in infrastructure development grants until the infrastructure and equipment backlogs have been eradicated and these universities have the necessary infrastructure and equipment to enable them to offer the same quality undergraduate teaching and learning experience as the developed universities. The need for additional funding to maintain this additional infrastructure makes the introduction of an institutional factor grant for HDIs all the more important.

c) A support unit for HDIs should be established. In the light of the managerial and other problems that have occurred in some of these universities, particular attention needs to be paid to institutional accountability regarding resources allocated.

d) The challenges faced by the HDIs in terms of the level of poverty of students and under-preparedness of students need to be addressed by increasing funding allocations for foundation programmes, implementing the recommendations made by the NSFAS review committee, and strengthening the institutional grant component for disadvantage. As also recommended in the recent NSFAS review report (DHET 2010a), race as a proxy for socio-economic disadvantage should be replaced by a more valid proxy that will better reflect the levels of support required by students, especially those from disadvantaged socio-economic backgrounds. The continued strengthening of NSFAS funding will improve institutions' collection of student fees, which will also improve the financial health of the HDIs.

e) The recommendations with regard to the allocation of research grants and research development grants, which are also addressed in the current report, will enable HDIs to improve their research capacity over time. It is recommended that each of these universities develop at least one centre of research excellence based on the institution's strengths and that the establishment of these centres be funded by the DHET.

f) A full costing should be done of the backlogs and deficits in the operational costs of HDIs, to establish the extent of the resources that would be needed to address under-development at these institutions. This comprehensive costing would serve as the basis for negotiations for an improved financial dispensation and would provide the necessary leverage for making meaningful improvements at these institutions.

g) The recommendations listed here certainly do not address all of the resource-related challenges faced by HDIs (e.g. inadequate municipal services); challenges such as inadequate municipal services cannot be addressed sustainably through a higher education funding framework, and could justifiably be regarded as 'service delivery' issues requiring the involvement of other government departments such as local government, public works, communications and so on. An inter-ministerial forum for addressing these challenges is one possible intervention.

h) Acknowledgement is given to the changes that have already been effected based on the NSFAS review. The initiative of the full funding of third-year students as an incentive for these students to complete their studies is but one. Other than revising the NSFAS allocation formula to reflect actual levels of financial need, the recommendation made in the NSFAS review report regarding enhancing allocations to NSFAS should be re-emphasised. This will not only benefit increased numbers of deserving students – including the so-called 'missing middle' – but will also assist in addressing the unacceptably high levels of student debt especially in the HDIs.

i) All universities, including the HDIs, should be encouraged to manage their student enrolments prudently. Universities' enrolment data has shown that some universities have exceeded their enrolment targets. This over-enrolment has often put a strain on these universities' facilities and infrastructure, and has impacted negatively on the quality of education offered.

j) Universities that have incorporated campuses of former HDIs should receive a special dispensation in the infrastructure and efficiency earmarked grant until infrastructure backlogs at these campuses have been eliminated.

7. Teaching and learning

7.1. Teaching input grant

The following recommendations are made with regard to the teaching input grant and in particular with regard to the funding grid:

a) Rather than distinguishing between undergraduate- and postgraduate-level programmes, it would be easier in future to use actual National Qualifications Framework (NQF) levels to refer to the different years of study; i.e. Level 1 of study = NQF Levels 5, 6 and 7, Level 2 of study = NQF Level 8, Level 3 of study = NQF Level 9 and Level 4 of study = NQF Level 10.

b) The following changes should be made to the existing grid:

- CESM 06 moves from funding group 2 to funding group 3.
- CESM 08 moves from funding group 3 to funding group 4.
- CESM 04 moves from funding group 2 to funding group 1.
- Funding groups 2 and 3 are collapsed into the new funding group 2.
- Funding group 4 becomes the new funding group 3.
- The new weights for the funding groups become 1 for funding group 1, 2.5 for funding group 2, and 3 for funding group 3.

c) The funding weight for distance education offerings at undergraduate and honours levels remains at 0.5 (see recommendations in 7.3, below).

d) The level weights remain as 1, 2, 3 and 4.

The resulting recommended funding grid is reflected in Tables 1 and 2 (below).

Table 1: Funding groups, by CESM categories

Funding group	CESM categories	Funding ratio at undergraduate level
1	04 business, economics & management studies, 07 education, 12 law, 18 psychology, 19 public administration and services	1
2	02 architecture & the built environment, 05 communication & journalism, 06 computer & information sciences, 10 family ecology & consumer sciences, 11 languages, linguistics & literature, 15 mathematics & statistics, 17 philosophy, religion & theology, 20 social sciences	2.5

3	01 agriculture & agricultural operations, 03 visual & performing arts, 08 engineering, 09 health professions & related clinical sciences, 13 life sciences, 14 physical sciences, 16 military sciences	3

Table 2: Weighting factors for teaching inputs

Funding group	NQF Levels 5, 6 and 7		NQF Level 8		NQF Level 9		NQF Level 10	
	Contact	Distance	Contact	Distance	Contact	Distance	Contact	Distance
1	1.0	0.50	2	1.0	3.0	3.0	4	4
2	2.5	1.25	5	2.5	7.5	7.5	10	10
3	3.0	1.50	6	3.0	9.0	9.0	12	12

e) The Higher Education Qualifications Sub-framework (HEQSF) increased the NQF credits for masters programmes to 180 credits and for doctoral programmes to 360 credits. It is recommended that the formal time for masters be increased to 1.5 and the formal time for doctoral programmes be increased to 3 for HEQSF-approved masters and doctoral programmes, for the calculation of subsidy credits. This will over time increase the subsidy for these programmes by a third as they become registered on the HEQSF.

7.2 Teaching output grant

The Committee makes the following recommendations:

a) An error that occurred with regard to the Bachelor of Technology (B Tech) qualifications during the implementation of the funding framework must be corrected. The B Tech was classified in the category of professional first bachelor degree: four years or more and given an output weight of 1.5, while all B Tech degrees offered in the system have a formal time of one (except for one B Tech degree that has an actual formal time of four). It is recommended that B Tech degrees be separated out as a category and be *given a weight of 0.5*. The B Tech with a formal time of four should be retained in the category of professional first bachelor degree: four years or more and retain an output weight of 1.5.

b) Based on the proposals received, the following revised funding weights for both contact and distance education teaching output programmes that are in the process of being phased out are recommended (Table 3).

Table 3: Funding weights for contact and distance education teaching output programmes

Qualification type	Weighting factor
First certificates and diplomas of one year	0.25
First certificates and diplomas of two years	0.50
First diplomas and bachelor degrees of three years	1.00
B Tech degrees of one year	0.50
Professional first bachelor degree of four years	1.50
Professional first bachelor degree of more than four years	2.00
Postgraduate and post-diploma diplomas	0.50
Postgraduate bachelor degrees	1.00
Higher diplomas	0.50
Honours degrees	0.50
Non-research masters degrees and diplomas	0.75

c) The funding weights for both contact and distance education programmes shown in Table 4 are recommended for the HEQSF-aligned qualifications that are being introduced (see also 7.3, below).

Table 4: Funding weights for HEQSF-aligned qualifications

Qualification type	Weighting factor
Higher certificate (minimum total credits 120)	0.50
Advanced certificate (minimum total credits 120)	0.50
Diploma (minimum total credits 240)	1.00
Diploma (minimum total credits 360)	1.50
Advanced diploma (minimum total credits 120)	0.50
Bachelor degree (minimum total credits 360)	1.50
Bachelor degree (minimum total credits 480)	2.00
Bachelor honours degree (minimum total credits 120)	0.50
Postgraduate diploma (minimum total credits 120)	0.50
Masters degree (general) (minimum total credits 180) coursework component	0.75
Masters degree (professional) (minimum total credits 180) coursework component	0.75

d) Although the Committee agrees that in principle it would be ideal if funding could be equally distributed between teaching input and teaching output grants, *much more equity in the system needs to be achieved before a significantly increased percentage of the funding could be channelled towards teaching outputs*. The DHET has recently begun to allocate slightly more funds towards teaching outputs, and the Committee supports this gradual change towards more support for teaching outputs.

Note: Once the system has developed to such an extent that more funding can be channelled towards teaching outputs, it will become necessary to attach weights to the teaching outputs. Due to the fact that the movement towards a higher proportion of funding going towards teaching output units will result in a loss on the teaching input side of the weights for the CESM-based funding groups, the output units will have to be weighted to ensure that high-cost programmes are appropriately funded.

7.3 Distance education/open and distance learning (ODL)

The Committee notes the major shifts that are being introduced into distance education/ODL provision, including a draft policy on distance education (DHET 2012b). The Committee makes the following recommendations:

a) With regard to the *current differentiation – that is, that the distance education input subsidy is 50% of that for contact institutions* – work stream one, in collaboration with work stream four, gathered data on the relative costs of distance education provision and of 'contact' provision. The findings demonstrate that the current rate of 50% of the input subsidy of contact education is commensurate with current provision of distance education, and should be retained for the next three to five years.

b) By that stage, further empirical analysis should have been undertaken of costed plans and implementation of the envisaged shifts in distance education practice, which should highlight whether any addition should be made to the input subsidy for distance education. In the meantime, the *funding focus should be on developing the ICT infrastructure for the distance education system as a whole*.

c) With regard to *awarding the input subsidy*, any such subsidy needs to be justified by sufficient evidence of meaningful engagement. It is important that submission of evidence that students are truly 'active' require that the timing of submission of census data allows for students to have attempted a *meaningful* assessment and/or have engaged in a planned and monitored significant teaching/support initiative.

The remaining issues highlighted by the draft distance education policy are much simpler to respond to, and so the discussion or motivation is contained within each recommendation below. The Committee makes the following recommendations:

a) The *principle of parity of funding for teaching outputs* from accredited courses and programmes at all levels *for all modes of provision* should be retained, as it validates the accreditation quality assurance processes.

b) The *principle of parity of funding for teaching inputs for all accredited qualifications at masters and doctoral level for all modes of provision* should be retained, in recognition that *at this level* there is no significant difference in terms of resource inputs for different modes.

c) With regard to rewarding distance education for the *credits that students achieve* as part of qualifications awarded at other institutions, the extent of this occurrence should be quantified. Should it be found to be material, a mechanism should be found by DHET to reward the University of South Africa (UNISA), and any other major distance education contributor, for its contribution.

d) Currently, the *teaching input grant* accounts for more than five times the *output subsidy grant*. For distance education, in particular, this provides the incentive to increase access by enrolling large numbers of students (especially as it appears a simple matter to increase numbers as the materials already exist and there are no physical space constraints), but does not provide sufficient incentive to make the investment in quality teaching and support to ensure success. To guard against this problem, the Ministry should restrict enrolments in any module where there is currently an unacceptably low success rate – a minimum module success rate of 50% is suggested.

e) Where any provider, through the approved programme and qualification mix (PQM), offers a *low-enrolment distance education niche programme to address a national need*, cognisance should be taken of the fact that such an offering will not benefit from economies of scale, and the input subsidy should be adjusted to 100% of that provided to contact education. However, only those programmes that meet very stringent criteria in terms of national interest should qualify for this additional funding.

f) Qualifying distance education students *should continue to receive NSFAS funding*. In addition, such students should qualify for support to purchase a computer/notebook/other appropriate electronic device. Consideration should be given to supporting accommodation costs where this is necessary.

g) For funding purposes only, all modes of provision at NQF Levels 4–8, including mixed mode and blended provision, in which students spend 30% or less of the

assigned notional learning hours in staff-led and campus-based structured learning activities, should be considered as distance education and funded accordingly.

7.4. Clinical training of health professionals

The Committee makes the following recommendations:

a) The clinical training grant is welcomed and has to remain as an earmarked grant since it was earmarked by Treasury for these specific purposes.

b) The current national need to increase health professions will lead to rapid increases in student numbers, and it would become imperative that the grant be increased in relation to the expected increases in student numbers.

7.5. Veterinary sciences

The Committee makes the following recommendations:

a) The veterinary sciences earmarked grant should be incorporated into the block grant as a line item and the reporting requirements should be simplified by only requiring reporting on enrolments, graduates, equity profiles and geographical spread of students.

b) Discussions with the national Department of Agriculture, Forestry and Fisheries should be initiated once again, to further explore the possibilities of co-funding of the animal hospital,[4] to assist the University of Pretoria with the operating deficit of the hospital. If this does not succeed, the DHET should increase the allocations to veterinary sciences incrementally over time and provide more funds to the University of Pretoria in particular.

c) The inter-institutional working committee should be continued and its recommendations should be supported. Given the University of Pretoria's years of overall expertise and the fact that the institution provides a critical national resource for veterinary health sciences, its leadership and assistance in developing the capacity of the other three universities involved[5] is welcomed.

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[4] The Onderstepoort Veterinary Academic Hospital attached to the University of Pretoria
[5] Namely, North West University, Tshwane University of Technology and UNISA

d) The proportional allocations to the four universities, in relation to their enrolment share, as well as special support in the allocation for the animal hospital at the University of Pretoria, should be continued.

7.6. Development of African languages

The Committee makes the following recommendations:

a) The Committee supports the DHET's initiative, as indicated in the Green Paper for Post-school Education and Training (DHET 2012d), to encourage students to undertake at least one African language course as part of their degree or diploma programme. It is proposed that the nature of this course focus on practical, conversational skills to enable the student to communicate easily on a day-to-day basis.

b) The allocation for the development of African languages in the DHET infrastructure and efficiency grant should continue over the Medium-term Expenditure Framework (MTEF). However, additional funding should be sought or a specific grant should be created for the development of African languages in the following areas:

- Language of learning and teaching in universities;
- Inclusion in university curricula;
- Production of Foundation Phase teachers who are competent in an African language; and
- Expansion of language courses for students that provide practical, conversational skills to students.

c) While the Advisory Panel on African Languages in Higher Education[6] concludes its work and provides the Minister with a report and recommendations, the Panel should advise on the criteria for the allocation of the funds in the infrastructure and efficiency grant that targets the development of African languages.

7.7 Access to higher education for students with disabilities

The Committee makes the following recommendations:

[6] The Advisory Panel on African Languages in Higher Education was appointed by the Minister, to develop an implementation plan for the recommendations that had emerged from the round-table discussion hosted by the Minister in October 2010 on the development of African languages in higher education.

a) Universities are required to ensure the physical accessibility of buildings and facilities, and the creation of conducive campus environments that will guarantee meaningful and fulfilling university experiences for students with disabilities. The expansion in participation rates envisaged in the Green Paper for Post-school Education and Training (DHET 2012d) is meant for all students, including those with disabilities who have the academic potential to access post-school education. Barriers to higher education access and participation for students with disabilities should therefore be removed.

b) The Committee reiterates the recommendation made in the NSFAS review report (DHET 2010a) that all students with disabilities who meet the academic requirements for higher study and who are in need of financial aid should qualify for NSFAS funding.

c) Furthermore, the Committee supports the initiative by the DHET to provide funding for infrastructure development and improvement of disability access across all universities.

8. Research and innovation

8.1 Research output grant

The Committee makes the following recommendations:

i. Funding allocations for research outputs

a) The system's research outputs, especially research publications, have outgrown the available funding for research outputs, and in the financial year 2011/12 the actual Rand value of a research output unit dropped. It is therefore essential that more funding be allocated by Treasury to ensure that the success in increasing research outputs of universities be sustained and further incentivised.

ii. Further development of knowledge production through research publications

a) The current funding framework must be adapted to actively reward *excellence* and *quality* and not only *quantity*. One way would be to follow international practice whereby the existing accredited journals are rated or ranked in terms of criteria such as citation impact. This practice is followed in Norway, where the Norwegian Research Council classifies journals into three categories and the amounts of research funding disbursed by the Council are linked to that classification. There are various journal impact ratings (SciMago, Web of Science) that could be used for such

an exercise. However, the real challenge in the South African system is the fact that the majority of local journals (approximately 220 of the 295) are not included in citation indices (Thomson Reuters Web of Science, or Scopus) and therefore do not have an impact factor. This is also mostly true for the titles in the International Bibliography of the Social Sciences (IBSS).

If this recommendation – that is, that a ranking of all accredited journals be introduced – is accepted in principle, a study would have to be commissioned to identify the fairest and most efficient way of implementing such a proposal. It is important to point out that a study of this kind is crucial, as the effect of introducing a ranking system that does not take into account the contextuality of our system (and specifically the disproportionate number of journals in the humanities and social sciences) could be disastrous for the future of the majority of local journals on the current list.

b) The current journal list should also be expanded to include journals indexed in Scopus and SciELO (the Scientific Electronic Library Online). This would have the immediate effect of broadening the overall number of journals (by an estimated 10%–15%) and would specifically address the concerns of fields such as computing sciences and others regarding the list of peer-reviewed conference proceedings (which are much better covered by Scopus).

c) The funding framework should distinguish between three categories of journals, and award different subsidy-unit values for papers published in the different journal categories. The proposed three-fold classification of journals would be as follows:

Category 1: High-impact journals in the Thomson Reuters Web of Science, SciELO or Scopus (JIF >1.00)[7]

Category 2: Low-impact journals in the Web of Science, ScieELO or Scopus (JIF <1.00)

Category 3: Journals with no impact factor[8]

[7] The Committee suggests that journals with a two-year Journal Impact Factor (JIF) of 1.00 or higher be defined as 'high-impact' journals. Although citation behaviour differs across fields, an impact factor of 1.00 or higher indicates that the journal generates at least as many citations as the number of papers it publishes.

The Committee further proposes the following subsidy-unit values for papers published in the three journal categories above:

Category 1: 1.2

Category 2: 1.0

Category 3: 0.8

However, a modelling study should also be done to test the effect of the implementation of these new values on the system and specifically the distribution of monetary values across scientific fields and universities. This could result in revised weights.

d) Based on various studies that were commissioned by the Academy of Science of South Africa in 2009 and 2010 (ASSAf 2009), certain recommendations were made about the weighting of monographs and the process of assessing book and chapter subsidies. As far as the former is concerned, a recommendation was made that the current weight of five units for a monograph be increased to at least eight units. As far as the latter is concerned, these studies also recommended that a quality criterion be introduced in the assessment of monographs and chapters in books. The recommendation was – in the interests of quality, efficiency and more transparency – that *the DHET compile a list of "accredited" publishers*. International publishing houses such as Springer, Oxford, Blackwell, Sage and many more are internationally recognised for excellence in editorial and publishing practices. The greater challenge is to decide whether local publishing houses and university presses are on an equal footing with international publishers such as these. Again, however, it should not be too difficult to develop a classification or ranking of publishers according to which the subsidy for books and monographs can be allocated. Such a system would combine the imperative of excellence with the demands of efficiency and transparency (the current system of assessing book subsidies being neither efficient nor transparent).

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[8] This category would include all South African journals that are not indexed in the Web of Science, SciELO or Scopus and hence would not have an impact factor value. Once a South African journal was accepted for any of these indexes, it would start recording an impact factor and could then be assigned to either Categories 1 or 2.

e) The current funding framework does not intentionally encourage any form of *collaboration,* be it national or international. Collaboration (as measured in terms of co-authorship) is field specific, but international collaborative papers (or collaborations between universities and science councils) need to be incentivised, as such papers typically generate high numbers of citations, which increases the overall visibility of South African science. A similar argument could be made about the desirability of incentivising national collaboration (among universities and between universities and the science councils) and regional collaboration (with other African universities). Again, the Committee proposes that *a study be commissioned to look into the mechanisms of introducing a more fine-grained reward factor for collaborative papers*, taking into account differences in the publication behaviours across different fields and disciplines. An option that has been proposed is to *divide the research output unit in total among the South African authors*.

The existing funding framework has impacted very positively on the university sector as a whole and has had very positive effects on the research production of HDIs as well as universities of technology. The current framework allows for further targeted interventions to assist some universities to develop their research capabilities further. However, there is evidence that these research development grants are not optimally utilised. The Committee believe that a much more fine-grained and targeted approach is required to enable those universities and universities of technology that have limited research capacities to develop a critical mass of niche areas. This would require that *a proper analysis of the strengths of these institutions be undertaken, which needs to be complemented by the development of research development strategies and plans that are properly managed and monitored*. The DST and DHET investments must be better aligned.

f) With the exception of the research development grants, which are currently ring-fenced, the existing funding framework does not provide any specific incentive or reward to emerging scholars. Given the imperative in this country to broaden the human capital base for scientific knowledge production, the Committee believes that it is essential that the *goal of building research capacity for our system be re-affirmed*. There are various measures that could be considered in order to incentivise research production and publication for emerging scholars. One option is to consider the establishment of a *student journal* (or two journals, for the humanities and natural sciences respectively) where postgraduate students can publish for the first time.

Such journals (perhaps best administered by the Academy of Science of South Africa, or ASSAf) could be accredited and would enable students and young lecturers to 'break into the publishing system'. Another option would be to provide additional rewards to publications by young and emerging scholars in international journals (e.g. the first publication by a young scholar in the Thomson Reuters – formerly known as ISI – database and/or Scopus could earn 1.5 subsidy units). Therefore, a study should be commissioned to investigate the various means whereby the research production and publication of emerging scholars in all fields could be incentivised.

g) Research outputs from the *performing, creative and visual arts should be funded*. The review of these outputs should be done by an internal panel at each university and, once approved, should be submitted to a DHET panel. The DHET should include a number of international representatives to benchmark outputs and to provide quality assurance.

h) Incentives to generate patents should also be put in place.

i) Partnerships with science councils should be systematised.

j) Investment in equipment and infrastructure should be ramped up and maintained.

9. Work-integrated learning and community engagement

a) Work-integrated learning (WIL) components of programmes at public universities should be funded, provided that they meet the following key requirements:

(i) WIL must be an integral and mandatory curricular requirement of the academic programme concerned. That is, it must be undertaken within a purposefully designed curriculum and should be credit bearing. The number of credits should relate to the learning outcomes of WIL, and not to the number of hours spent on WIL.

(ii) Qualifications with a WIL component must be accredited as such by the Higher Education Quality Committee (HEQC) within the new HEQSF. As captured in the Council on Higher Education's (CHE) good practice guide

(CHE 2011a), the WIL component should be appropriately structured, properly supervised and assessed. The inputs received by the work stream suggested that these three elements are lacking in many WIL programmes. It is therefore anticipated that, in most cases, recurriculation will be required in order to conform to HEQSF requirements.

Preliminary costing of the funding of the existing WIL shows that this would require an additional R137 million per year. Logically, it would make sense for this additional funding to be sourced from the National Skills Fund (NSF).

b) Students also incur costs to participate in WIL programmes. Even though the extent to which student-related costs have hindered successful participation in WIL programmes has not been established, preliminary assessments have indicated that poor students in particular are negatively affected by the costs related to WIL. The DHET should therefore consider funding student-related costs of WIL through the NSF. The student expenses with regard to the teaching practice that forms part of the B Ed programme should be funded as part of the bursary or through the NSF. Such funding should only apply to students who participate in WIL programmes that meet the criteria in recommendation (a) above and who do not receive any form of remuneration from the WIL sites.

c) Although community engagement is supposed to be part of the core function of universities, the wide variation in the ways in which universities approach community engagement, coupled with its location often outside of the academic core (i.e. outside of teaching and learning, and research), make the funding of community engagement an extremely complex task. It has been suggested that an earmarked grant or a new subsidy category within the block grant be introduced to support community engagement activities at universities. However, given the range of university approaches to community engagement and the funding constraints, among other factors, the *Committee recommends that only those kinds of community engagement programmes or activities that carry credit value as part of an accredited academic programme should receive funding*. The recommendation above means that only those community engagement activities that are an integral and structured part of the research and teaching functions of universities should be funded.

10. University development and efficiency improvements

10.1. Foundation programmes

The Committee makes the following recommendations:

a) Foundation programme provision should not continue indefinitely. The root of the problem lies in the poor quality of the basic education system and needs to be addressed by government. It is nevertheless expected that the need for foundation programme provision will continue for the foreseeable future, and it is believed that foundation programme provision should continue since it promotes equity in the system.

b) The funding allocated to foundation programme provision would have to increase considerably to support larger numbers of under-prepared students entering the system. The extent to which foundation programme provision can be expanded to accommodate increased numbers of under-prepared students should be managed within the enrolment planning process.

c) The formal time of extended curriculum programmes should be increased, to give full credits to these programmes. There are three good reasons for implementing this recommendation. Firstly, it would simplify the allocation of credit values per programme. Secondly, it would align foundation programmes for a possible move towards formal four-year and five-year qualifications, should the Minister in future approve such a change. Thirdly, it would generate the necessary additional funds within the teaching input sub-block grant for extended curriculum programmes, which are currently only funded for three or four years instead of four or five. The additional foundation grant should remain to support these programmes, not only because they are more expensive than the mainstream programmes but also because the grant enables the DHET to steer the implementation of, and special support for, foundation programme provision. If resources are not increased to provide the additional funding that would be needed this might result in a slower overall growth in first-time entering students for university education.

d) Once the findings and recommendations of the current investigation of the CHE into a four-year initial degree/diploma and a five-year degree for professional degrees are available, and depending on the Minister's decision in this regard, the foundation programme provision in its current form will have to be re-evaluated.

e) Foundation programme provision should be embedded in the enrolment process and should be strengthened in all universities.

f) The Committee supports the recent policy change that universities be migrated, through the enrolment planning process, to their actual enrolments for foundation programmes, in the same manner as for mainstream enrolments.

g) The DHET should continually monitor and report on the impact of foundation programme provision with regard to the success and throughput rates of foundation students compared to mainstream students, to ensure that empirical evidence is available for continued support of foundation programme provision.

h) As proposed in the new policy (DHET 2012c), the Committee supports abolishing the three-year rolling funding cycle, in favour of continued funding for the duration of the approved foundation programmes, and enrolment targets established through the normal enrolment planning process.

i) A one-year, stand-alone foundation programme should be introduced for students that need mathematics and science support in order to enter science, engineering and technology fields. This approach would support the development of entry-level programmes that are generic to broader fields, in order to prepare students in basic skills and knowledge and encourage further study in specialised career fields.

10.2 University development grant

Due to the fact that there are areas of overlap between teaching development, research development and the development of the new generation of academics, the Committee proposes that an umbrella, earmarked *university development grant* be allocated that includes funding for teaching development, research development and the development of the new generation of academics.

An example of an area of overlap is the improvement of the qualifications of academic staff. The idea is that the allocation of the funds flowing from the three components should be calculated and determined separately; but that, based on specific institutional needs, universities can develop an integrated plan to address these three issues. Universities should be allowed to propose a different division of the pool of money generated by these three components, on condition that attention be given to all three components. Clear performance targets have to be set for all three components and the funding can only be accessed on a project base. Another rationale for this combined development fund with three components is that in certain universities the need for the improvement of staff qualifications, which is a prerequisite for the improvement of all three components, might have to be prioritised to give effect to any improvement of the three areas that need to be

addressed. It is also envisaged that one integrated development plan addressing all three aspects should be developed and that one integrated report should be delivered by the university on the achievements of the goals set in the project proposals. Until the plan of the DHET with regard to the development of the next generation of academics has been completed, the initial funding of this component would probably require a slice from the teaching development and research development funds.

10.2.1 Teaching development fund

The Committee makes the following recommendations:

a) Teaching development funds should be earmarked and should be a percentage of the total MTEF allocation for teaching outputs. It is recommended that 20% of the teaching output fund be allocated to the teaching development fund. This should be done over a period of five years, which should be considered as the first implementation of a new funding arrangement for teaching development. The size of the teaching development fund should be reviewed after a period of five years.

b) Teaching development funding should be distributed to universities on the basis of degree-credit FTE students (FTE students that have passed the study courses). The use of the new basis would eliminate one of the unintended consequences of the current policy on teaching development funds – namely, that as the graduate output of a particular university becomes weaker, its reward in the form of obtaining teaching development funds increases.

c) Of the teaching development fund, 2.5% should be top sliced and allocated for a national development with appropriate organisational structures for supporting national, regional and institutional teaching development initiatives. The fund should be focused on training and developing staff at universities where high-level teaching development skills are not readily available, together with regular monitoring of the impact of such interventions. This should be done under the authority of the CHE.

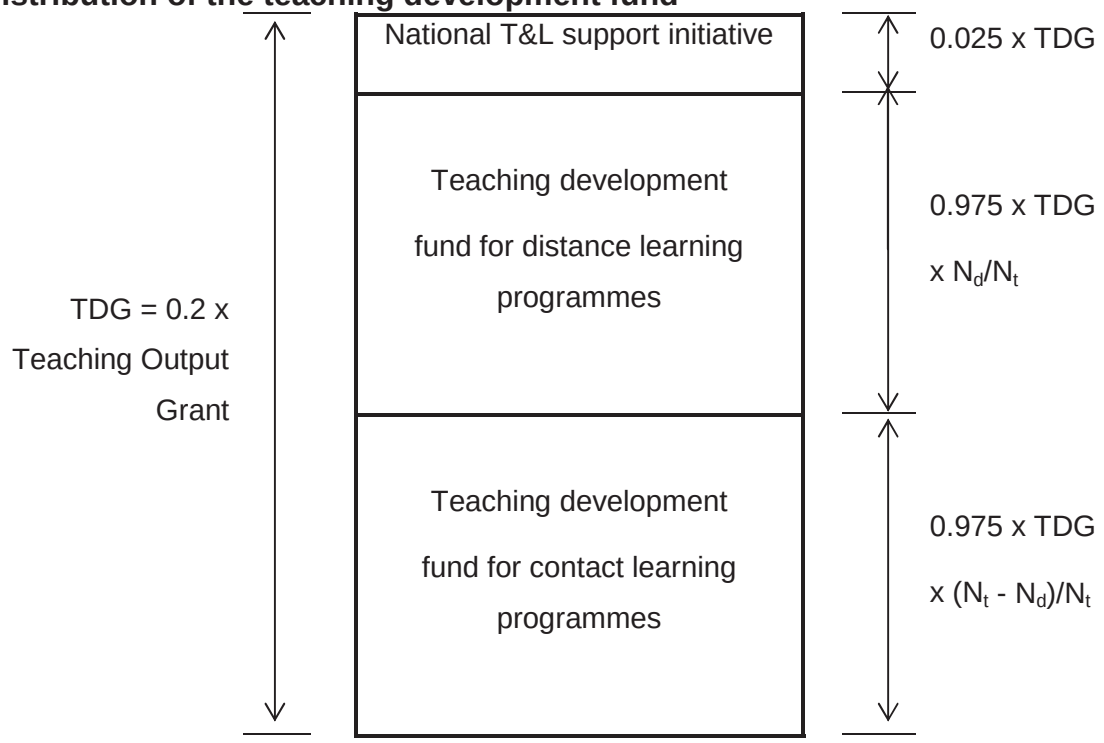
d) The importance of learning resources and the use of technology in the improvement of teaching needs to be recognised and funded from the infrastructure and efficiency funding allocations, if the cost does not allow this to be funded from the teaching development allocations to universities.

e) The remaining 97.5% of the teaching development fund should be divided into two segments: one for the allocation of distance education programmes, and one for allocation to contact education programmes. The division should be on the basis of the relative share of enrolled full-time equivalents in the year n-1 (where year n is the

first year of the implementation of the new funding arrangement) in the two learning modes. The proposed division is shown in Diagram 1 (below).

f) The allocation of teaching development funds and the utilisation of these funds must be linked to recommendations made based on the CHE institutional audits. Guidelines for improving teaching and learning have been provided in these institutional audits. The implementation of the teaching development funds has to be monitored very closely.

Diagram 1: Schematic representation of the proposed make-up and distribution of the teaching development fund

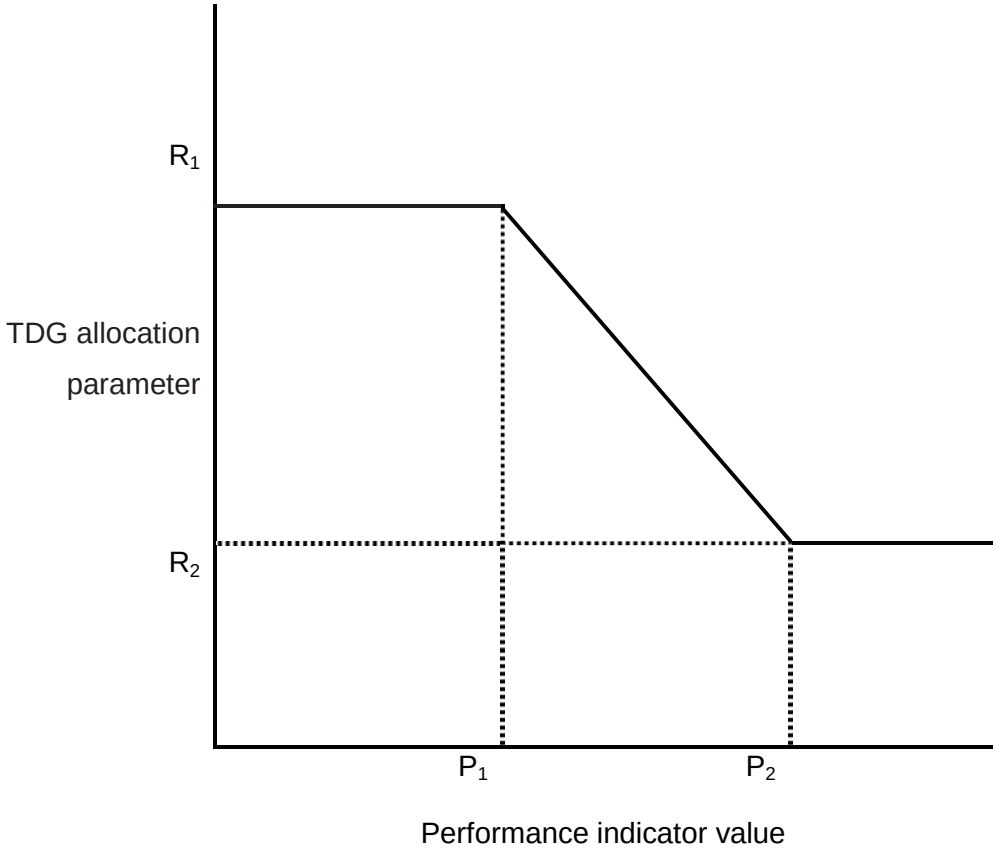


N_t = Total enrolled FTEs in the higher education system

N_d = Total enrolled FTEs in distance education programmes

g) Within the distance education and contact learning components of the teaching development fund, the maximum potential allocations to be made to institutions should be determined using the mechanism depicted in Diagram 2 (below).

Diagram 2: Proposed mechanism for determining the maximum potential TDG allocation to individual institutions



- The DHET should determine the performance indicator values P_1 (expected lowest performance of any higher education institution at the end of the five-year TDG cycle) and P_2 (desired upper level of performance for most institutions – some already perform above this level).
- No performance-related additional TDG is allocated to an institution with a performance below P_1. Institutions performing above level P_2 will still receive a minimum level of TDG.
- The TDG allocation parameter is a Rand value allocation per student to a particular institution, and is dependent on the number of unsuccessful students in the institution.
- The values of R_1 and R_2 will be determined by the total funds available in the teaching development fund.

h) All universities should receive a teaching development fund, to address the number of graduates as well as the quality of graduates emerging from the system. This should be done at least in the short term.

i) The performance indicator value should be the success rate of the university under consideration, which makes annual performance assessments possible. At the end of the five-year period, the improvements in graduations should be evaluated.

j) Upon determining the maximum potential allocation to all institutions, each university should be informed of this value and, on this basis, should be invited to submit a teaching development plan for consideration and approval by the DHET.

k) In the case of distance education programmes, universities should be expected to show focused utilisation of teaching development funds on courses or modules with large student registrations.

l) Approved plans should then be funded up to the maximum potential allocation for an initial period of five years, with annual increases at the same rate as the increase in the overall teaching output fund.

m) Institutions should provide annual progress reports, and teaching development fund allocations in years two to five of each cycle of funding must depend on institutions' demonstration of suitable progress.

o) The Committee also recommends that portions of the teaching development fund be set aside to support two innovations:

- The collaborative development of learning resources in areas of national importance, which will be made available to all institutions as *open educational resources (OER)*.
- Action research into the use of *digital technology for quality, cost-effective teaching and learning in the South African context.*

10.2.3. Research development fund

The recommendations with regard to research development are as follows for the various processes:

<u>Institutional research development plans</u>

a) Each university must have a *university development plan*, which includes a research development plan with goals, targets and steps for practical implementation and mechanisms for monitoring and evaluating performance. Thus, research development

plans must specify measurable performance indicators and outline the process for self-evaluation and quality assurance mechanisms.

b) Research development plans should indicate the intended funding allocations focusing on areas of existing and potential strength.

c) Research development plans should include a realistic budget. Institutions should not rely solely on funds from the DHET. Rather, they should indicate how they plan to access funding from other sources in order to support their research strategies. Planned partnerships with industry and other stakeholders are encouraged. All universities should submit their research development plans to the DHET, with realistic objectives and practical steps outlined for achieving their set goals. These plans must outline the development foci of the university for a three-year cycle. The DHET may discuss proposals, and alterations to proposals, with universities as necessary.

Approval of plans

d) In assessing institutional plans the DHET will solicit input and assistance from bodies such as the CHE, the NRF and any other relevant structures.

e) Research development funds will be allocated upon approval by the DHET of a research development plan.

Determination of research development funding

f) Research development funding will be generated through top slicing within the research output block grant and allocated as an earmarked portion of the MTEF. The Minister will determine the percentage of allocation and may adjust it downwards to maintain inflationary increases to the Rand value of actual research outputs and to compensate for increases in actual research outputs. The percentage that is top sliced should remain stable for a period of three years.

g) Universities must be clustered into three groups based on their research output performance for the previous three years; then, on the basis of their placement in the clusters, a new norm needs to be set for research outputs. The universities in the top cluster should have individual norms based on their individual level of performance.

h) Due to the fact that the research outputs are increasing constantly, the DHET will have to revise the norms for each group every three years.

i) In future, norms should be determined on the basis of the current performance of the university and not on the basis of institutional type. This has three advantages, namely:

a. Universities that perform way below the previous norms will not receive such extraordinarily high research development funds as a result of their poor performance.

b. It will allow for a more incremental development path, which is more in line with the current capacity of the university.

c. All universities will receive research development funds.

The three clusters and the proposed norms for the 2013/14–2015/16 funding cycle are shown in Table 5 (below).

j) The proposed clustering is meant to allow the Department to set differential targets and norms, and takes into account institutional history, context, mission and previous and current performance. Thus, research plans must reflect the institution's specific development needs characteristic of its current cluster.

k) The research development funds should be used as follows by institutions in the three different clusters:

Cluster 1 institutions need to focus on:

a. *Collaboration*: These institutions should be rewarded for collaborating with other institutions, especially those in cluster 3.

b. *Quality*: These institutions should be encouraged to focus on quality and on developing niche areas and areas of excellence that are of national importance.

c. *Equity*: Staff development at these institutions should focus on black, female, disabled and young academic staff members.

d. *Postgraduate student development*: Cluster 1 institutions need to focus on developing the future academics needed for the system as well as the researchers for knowledge production and innovation.

Table 5: The proposed three clusters, and actual and proposed norms for the 2013/14–2015/16 cycle

University	Actual weighted research outputs per permanent academic staff member	Proposed norm for the 2013/14–2015/16 funding cycle
Cluster 1		
SU	2.4	2.5
UCT	2.2	2.4
RU	2.2	2.5
UP	2.0	2.2
Wits	2.0	2.1
UFH	1.5	2.1
UWC	1.5	2.0
Cluster 2		
UKZN	1.4	1.7
UJ	1.4	1.7
UFS	1.4	1.7
NMMU	1.4	1.7
NWU	1.2	1.7
Cluster 3		
UNISA	0.8	1.1
UZ	0.6	1.1
Univen	0.6	1.1
TUT	0.5	1.1
UL	0.4	1.1
CPUT	0.4	1.1
CUT	0.3	1.1
VUT	0.3	1.1
DUT	0.3	1.1
MUT	0.1	1.1
WSU	0.1	1.1

Cluster 2 institutions need to focus on:

a. *Improving staff qualifications*: These institutions must focus on assisting staff with masters degrees to obtain their doctorates.

b. *Developing research infrastructure*: Infrastructure that supports research, as well as a research office, may need to be developed.

c. *Improving research policy*: The use of research and research development funds must be carefully considered to find ways to increase quality output.

d. *Collaboration*: These institutions should be rewarded for collaborating with other institutions, especially those in cluster 3.

e. *Quality*: These institutions should be encouraged to focus on quality and on developing niche areas.

f. *Postgraduate student development*: Cluster 2 institutions must also assist in developing the future academics needed for the system.

Cluster 3 institutions need to focus on:

a. *Improving staff qualifications*: Too few academics in institutions in this cluster have either a masters or a doctoral qualification and thus the majority of research development must go towards staff development, as the low levels of staff development in terms of postgraduate qualifications impact negatively on research and teaching outputs in this cluster.

b. *Developing research infrastructure*: Infrastructure that supports research (libraries, laboratories etc.), as well as a research office, may need to be developed. It is necessary for these institutions to identify niche areas where the development can be focused, so as to increase the impact of the funds received.

c. *Improving research policy*: Current policy may not be assisting growth in research output and the allocation of funds must be carefully considered.

l) A threshold should be set per university for percentage shortage, which would be considered for the calculation of research development funding. In other words, if the performance of a university is deteriorating and the shortage is increasing then the university should not receive more funding for research development as a result.

m. Research development funding shares should be determined on a three-year basis and the shares should remain the same for a three-year funding cycle. The shares need to be migrated over the three-year period. This would ensure stability in the research development funding allocations and enable universities to plan for a period of at least three years.

Monitoring

n) At the end of each funding cycle, all institutions should submit progress reports to the DHET, indicating improvements in research performance during the funding period.

o) Annual progress reports should be submitted, at the same time as institutional annual plans, to the Department. A prescribed format for the annual progress reports will be developed by the DHET. Administrative procedures will be kept as simple as possible so as to minimise costs both for the Department and for the individual institutions.

p) Improvement against the submitted plan is necessary in order to continue accessing research development funds. Continued eligibility for funds will depend upon performance against the approved plan.

q) At the end of a funding cycle, after Departmental assessment has taken place, institutions should submit an updated research development plan for the next cycle in order to continue accessing funds.

r) The DHET will introduce improvement measures and associated monitoring when an institution has not reached its planned goals, and may have to request input from the CHE and other stakeholders in identifying factors that may have inhibited progress. The Department will then engage with the institution in addressing these factors.

National initiatives

s) In addition to allocating research development funds directly to institutions, the DHET should make use of funds for important national developments as identified. These could include the provision of electronic journal resources for all institutions, the development of regional libraries of excellence, the organising of research and writing training workshops, and other initiatives that are identified.

t) Furthermore, the DHET should develop a National Research and Development Plan (NRDP) for higher education. This should reflect on and pinpoint, among other things, the current strengths and potential growth areas for the system as a whole.

u) The total available research funding in the DHET budget has become inadequate for the rapid growth in research outputs, and this makes it even more urgent for the government to increase the funding levels of higher education in South Africa.

10.3. Institutional factor grant

The Committee makes the following recommendations:

a) The institutional factor for size and disadvantage should be retained. The Committee is of the opinion that the current size of the allocations is adequate.

b) Race should no longer be used in the institutional allocation factor for disadvantage; rather, South African students – irrespective of race – that originate from non-fee-paying schools should be classified as disadvantaged. The Higher Education Management Information System (HEMIS) data on the schools from which students originate will have to be improved.

c) The same formula should be used, but the contact FTEs of students that originate from non-fee-paying schools should be used in the calculation.

d) The institutional factor grant for HDIs, as discussed in Section 6, should be introduced. The grant should be 2% of the total block grant.

10.4. Merger multi-campus grant

The Committee makes the following recommendations:

The merger multi-campus grant should be phased out over time and incorporated into the block grant funding, for the following reasons:

a) This is in line with recommendations from institutions that earmarked grants be phased out because they eroded the block grants over time.

b) This is the only factor in the performance-based funding framework where the differences between merged and other institutions are discernible.

c) It is suggested that the multi-campus grant in some instances became an inhibiting factor for some universities in terms of fully merging and streamlining processes and systems at the different merging partners.

d) Other universities also run multi-campuses, and trying to factor all the special circumstances of all universities into a funding framework will overcomplicate the framework. This category is becoming increasingly complex because of the disparity between institutional provisions, and issues like the proposed de-merger of the University of Limpopo and MEDUNSA (the Medical University of Southern Africa).

10.5. Infrastructure development, maintenance and equipment

The Committee makes the following recommendations:

a) The Committee supports the HESA (2012) recommendation that there be an investigation into the condition of buildings and infrastructure shortages at universities, to ensure informed decisions with regard to state fund allocations for the renewal and maintenance of buildings.

b) The Committee supports the HESA (2012) recommendation that the PCS (Programme Classification System), as well as the space and cost norms, be

revised. It would be useful for the DHET to use the surplus/deficits calculated on the basis of the norms as a guideline in decisions with regard to the allocation of infrastructure and efficiency funding.

c) The Committee supports the allocation of infrastructure funding on the basis of the submission of project proposals. It would however be more efficient if the decisions could be informed by more reliable information on existing backlogs and conditions of buildings. The basis on which allocations are made should be transparent.

d) Addressing the backlogs at the HDIs and in student housing should continue until all universities are adequately equipped to offer the same quality of undergraduate education.

e) Given the various competing demands by universities (i.e. increased block grant allocation, need for more financial aid to poor but academically deserving students etc.), it is certain that the provision of an earmarked grant for maintenance and the replacement of old equipment with new would not be the best measure to ensure infrastructure maintenance. Rather, universities should be encouraged to set aside funds from their block grant for such purposes. Already a number of universities are providing from their block grant allocation a percentage for the renewal of infrastructure. Therefore, all universities must be encouraged to follow this approach. The strategy of the DHET would be to negotiate a better funding dispensation for higher education to ensure that the block grant is increased.

f) The DHET has requested that all universities, by 31 January 2014, submit a comprehensive maintenance plan outlining how old and new infrastructure will be maintained. The assessment of these plans should be done with a specialised team of infrastructure and financial experts from the sector and should be linked to work undertaken on university reserves. The Higher Education Facilities Management Association also needs to be involved in these analyses. This will ensure that submitted maintenance plans and analyses are linked to the financial position of universities. This work must be undertaken by the Department using criteria and a team of experts that will assess infrastructure across the sector to ensure standardisation.

g) All universities should be encouraged to build reserves for the planned future replacement of equipment and the renewal of infrastructure, once the financial health of universities has improved to such an extent that they can afford to build up reserves.

h) The establishment of new universities as well as the initial seed funding and long-term subsidy implications will have to be funded by new funding. It cannot be

funded from the existing funding allocations, to the financial detriment of existing universities.

i) All universities should make provision for ongoing maintenance of both existing and new infrastructure.

m) The DHET and the DST, in liaison with universities and research councils, should investigate the possibility of establishing a national digital library that is accessible to all universities and research institutions. National funding of such an initiative should be explored and the national Department of Communications, which is in the process of reviewing the ICT policies of higher education institutions, should be involved.

11. Student fees, and the National Student Financial Aid Scheme (NSFAS)

11.1 Student fees

The Committee makes the following recommendations:

a) Given that there are public and private benefits, the funding of universities should be predicated on state subsidies and tuition fees, with provision being made for financially needy students.

b) 'Capping of fees' should not be implemented, due to the fact that the quality of higher education would suffer and universities would not be in a position to cross-subsidise other financially needy students through university-funded student bursaries.

11.2. NSFAS

The Committee supports the recommendations made by the NSFAS review committee (DHET 2010a) and acknowledges that these recommendations are being implemented. However, the Committee makes the following recommendations:

a) There should continue to be steep increases in NSFAS funding, to enable universities to award deserving students higher allocations that are more in line with the real cost of study.

b) Academic support for NSFAS recipients – in the form of foundation programmes and other academic support activities – should be prioritised, to ensure higher levels of student success and higher returns on investment for government.

c) The mix of loans, and grants to reward performance, should be continued, due to the private returns for successful NSFAS students, and to incentivise performance through conversion to grants.

d) High priority should be given to improving the recovery of NSFAS loans, in order to grow the available pool of funding for future students.

e) The Committee supports the proposed new allocation system, where NSFAS will deal directly with students, since it will lead to a much more efficient system.

f) The Committee supports the removal of race as a proxy for eligibility.

General note:

a) The timeframe for completion of the report makes it impossible to flesh out all of the allocation methodologies and to develop and sketch all of the possible scenarios. In addition, though, it is recommended that a technical team be appointed to complete these. This technical team should be able to provide a full picture, based on modelling, of what the final impact would be in actual financial terms regarding the sum of recommendations made.

1. Background to the review

1.1 Introduction

The importance of higher education in development has been highlighted in recent reports of the World Bank. In 2008, the World Bank's report *Accelerating Catch-up: Tertiary education for growth in Sub-Saharan Africa* (Shahid & Saint 2008) spelled out the case for more knowledge-intensive growth in Africa and described the critical role of higher education in this endeavour. This was followed by the World Bank report *Financing Higher Education in Africa* (2010) emphasising that sustainable growth in Africa is contingent on the capacity of states to diversify their economies, in the process of which higher education plays a key role – in training qualified individuals who will be capable of implementing new technologies and using innovative methods to establish more efficient enterprises and institutions and thus allocate resources more effectively. Through research and increased knowledge, higher education can also assist in addressing the challenges arising from population growth, limited arable land, endemic diseases, urbanisation, energy costs and climate change. The *National Development Plan 2030* (NPC 2012) similarly makes a case for the importance of a highly skilled workforce as well as innovation for development – in both of which higher education plays a critical role. Increased participation rates in higher education are advocated by both the *National Development Plan 2030* and the Green Paper for Post-school Education and Training (DHET 2012d). A properly resourced, efficient, effective and expanded higher education system is critical in supporting the achievements of the goals of the *National Development Plan 2030*.

South Africa, like other developing countries, is faced with financial constraints and backlogs in higher education as a result of extraordinary growth and wider participation in the higher education sector in recent years. In South Africa the problem is exacerbated by historical disadvantage. The World Bank, in its 2010 report *Financing Higher Education in Africa*, concludes that in most Sub-Saharan African countries, enrolment in higher education has grown faster than financing capabilities, reaching a critical stage where the lack of resources has led to a severe decline in the quality of instruction and in the capacity to reorient focus and to innovate. The World Bank (2010) further notes that public funding in most countries is already overstretched, and universities cannot rely on public funding alone to be able to respond to the growing demand for access to higher education while

delivering a level of quality that provides students with the skills necessary to succeed in current and future labour markets.

South Africa's higher education system includes, on the one hand, a number of highly developed and well-performing universities and, on the other hand, a number of under-developed universities, which are performing poorly in terms of being able to offer a quality teaching and learning experience to students, and which have accompanying low levels of teaching and research outputs. The Committee in the current review hopes to make appropriate recommendations to ensure that the under-development of a number of universities (mostly historically disadvantaged universities) is eradicated within the near future. It is acknowledged that some of the HDIs have been able to rise above their circumstances, turn their under-development around and perform at extraordinarily high levels, through hard work, dedication and visionary leadership and management.

The current funding framework, which was introduced in 2003, came into effect in the 2004/05 financial year and was fully implemented in the 2007/08 financial year, has been in operation long enough to make it worthwhile to review its impact and effectiveness in supporting the transformational goals of the system.

The review of the funding framework has proved to be very complex. Funding of universities is core to the achievement of their future sustainability, visions and aspirations, and the financial impact of recommendations had to be tested and the implications had to be considered from the perspective of the principles that are discussed later in this section. The major challenge that the Committee had to face was how to balance the dire need for improved resourcing of under-developed universities with the need to sustain excellence in the system. Extensive consultation processes were followed during the review, and many very sound proposals for change were received. The complexity for the Committee was that while some of these were in principle very good proposals, the Committee had to weigh these up against the impact that they would have on, especially, the universities that are facing ongoing financial hardship. It is important to ensure that each and every university in the system is resourced and developed adequately to play its strategic role within the community in which it operates within the wider society.

1.2 Background to the need for the review of the funding framework

Government funds are allocated to public higher education institutions in the form of block and earmarked grants. Block grants are meant to cover expenses relating to the institutions' day-to-day operations, which are linked to the provision of activities related to institutions' core activities: teaching, learning and research. The grant may be spent at the discretion of the council of each institution and reporting for the use of the block grant is mainly through the university's annual report submitted to the DHET. By contrast, earmarked grants are funds that may only be used for specific purposes designated by the Minister, and the accountability for the use thereof is through the provision of progress reports and audit certificates, which are provided on an annual basis by the universities. The Higher Education Act (No. 101 of 1997 as amended) gives the Minister the power to determine what proportions of the higher education budget are to be allocated to block and earmarked grants respectively.

In 2003, the Minister of Education (now Minister of Higher Education and Training) at the time published, with the concurrence of the Minister of Finance and after consulting the CHE, a notice setting out a new framework for the funding of public higher education: *Funding of Public Higher Education* (MoE 2003). This framework was introduced in phases over the three-year period 2004/05–2006/07, to ensure that the university system was not destabilised by rapid changes in the government income of individual universities. This interim strategy of partial implementation ended after the allocation to universities of funds for the 2006/07 financial year. The funding framework has been implemented in full since the 2007/08 financial year and it is important to determine if the framework implementation has met the transformation requirements set out the 1997 Education White Paper (DoE 1997).

The *Ministerial Statement on University Funding: 2011/12* dated 8 December 2010 (MHET 2010) outlined expectations of the DHET by stating that universities need to deliver the high-level professional and occupational skills, research and innovation required for economic growth and development. The Presidency's performance monitoring and evaluation (PME) targets set for the Minister of Higher Education and Training focus on specific areas that must align with the DHET's strategic goals and objectives. At postgraduate level these targets focus on increased outputs of honours graduates, research masters graduates, doctoral graduates and post-doctoral fellowships. At

undergraduate level these targets focus on increased outputs of graduates and diplomates in engineering, life and physical sciences, human and animal health sciences, and initial teacher education.

1.3 Terms of reference for the funding review Committee and work streams

The overall purpose of the Committee was to review the experiences of the past six years of partial and full implementation of the current funding framework for public universities. Its second main task was to determine what the university system's resource requirements would be over the next five to 10 years. The terms of reference were divided into two main tasks, with the first main task of the Committee being as follows:

Firstly, formulate a set of principles for the funding framework for universities, which would serve the transformational goals for the university education system as set out in the Education White Paper 3 of 1997. In meeting the first objective, the Committee has to:

a) Analyse the current funding framework to determine whether it has functioned effectively in achieving the goals set for it at its inception and, in particular, whether it has functioned effectively as a transformation-oriented steering mechanism. The functioning of the current funding framework should be tested against the agreed-upon set of principles.
b) Recommend what changes (if any) should be made to the current funding framework, taking particular account of the following: (a) historically disadvantaged universities and (b) small rural universities.
c) Determine how the links between the current funding framework and government's other steering mechanisms as set out in the *National Plan for Higher Education* of 2001 have functioned, and formulate recommendations on any changes that may be needed to ensure that the agreed-upon principles are served.

The second main task of the Committee involved the following:

a) Undertake an in-depth analysis of the human, physical and financial resources that were available to the university system over the five-year period 2005–09. In this regard, the committee should analyse shortfalls that have occurred in the resourcing of universities, and report on the efficiency and effectiveness of the university system's utilisation of its various resource categories.

b) Develop resource strategies and models that relate to the Department of Higher Education and Training's strategic plans for universities. These strategies and models should indicate what the human, physical and financial resource requirements of the university system will be if:

- enrolments and graduates in fields where critical skills shortages are experienced are to grow;
- overall graduate output rates are to improve;
- the placement of learners into structured and mentored workplace learning is to increase;
- equity of student access and equity of student output are to be enhanced;
- in general, the transformational goals of the 1997 White Paper are to be achieved; and
- the university system is to contribute more significantly to national, social and economic development needs.

1.4 The principles that should be served by the funding framework

Based on the various presentations made and submissions received, the Committee adopted the following principles that should be served by the funding framework and that should guide the review of the funding framework:

i. The funding framework should enable the state to *steer higher education* in terms of the achievement of specific goals.

ii. *Transformation* should be the central tenet of the funding framework and should extend beyond equity and demographic goals, to create a supportive, nurturing, socially and academically cohesive higher education system.

iii. The principle of *equity* should be served by linking funding to institutions' core activities, negotiated missions, size, geographic location, the academic needs of specific social groups of students, and historical disadvantage.

iv. The funding framework should support successful *transformation*, and the *dissemination of knowledge and sharing of innovation* that advance social and economic growth and development agendas nationally, regionally and internationally.

v. State funding is directed towards *core academic activities* and is not intended to meet all aspects of institutional costs.

vi. There should be a *differentiated university system* steered by funding, where universities attempt to establish their own defining characteristics, which will make specialisation in the university system possible and will improve efficiency in resource use.

vii. Funding should become more *output oriented* over time, once the system has achieved greater equity. While acknowledging the importance of the goal-oriented and performance-related principle of the existing funding framework, various universities and role-players argue that the funding framework should now move to an overarching emphasis on *outcomes*. These outcomes should be translated into a set of appropriate performance targets and outputs formulated explicitly to advance transformation. The outcomes, and associated performance target outputs, should align with national plans and institutional objectives and strategies alike.

viii. The Committee supports the principle of *cost sharing*. Cost sharing is predicated on the fact that higher education has both public and private benefits. Costs should be shared between the government, through subsidy payments, and private beneficiaries, through the payment of student fees. The idea of 'free' higher education is neither equitable nor likely to be affordable given other social priorities. Tuition fees should, however, not be allowed to compromise the public- and social-good purposes of higher education, and the strengthening of NSFAS is recommended as a mechanism for mitigating potential negative tuition-fee implications.

ix. Universities should have the *autonomy* to determine fee levels.

x. *Expenditure of public funds should occur within a paradigm of accountability, efficacy, efficiency and effectiveness*. The principle of meeting performance targets with fiduciary responsibility should be integral to the funding framework, coupled with clear consequences for non-performance. Efficiency should be reflected in improved student progression and completion rates. Accountability should be associated with links between funding and the achievement of agreed outputs.

xi. The funding framework should *promote quality and competitiveness*, focusing on both the quantity and the quality of outputs in the context of South Africa's competitiveness in the global knowledge economy. Government funding should support universities to, inter alia, achieve excellence in strategically selected areas of research and innovation, promote effective and transformative teaching and learning, and provide for and encourage a rich student experience.

xii. The key principles of *financial stability, financial predictability and transparency* of funding allocations must underpin the funding framework.

xiii. Funding allocations should enable universities to be *responsive to social and economic needs.*

xiv. *Co-ordination* and *collaboration* should be *enhanced*. As part of a process of alignment of and with the national planning agenda, the higher education sector could achieve optimal research and teaching outcomes with better co-ordination and collaboration among various ministries that provide funding in a range of forms to the higher education sector. The Ministries of Basic Education; Health; Agriculture, Forestry and Fisheries; Water and Environmental Affairs; Mineral Resources; Energy; and Science and Technology variously fund student bursaries, internships, research capacity development and equipment. The funding framework should also drive *greater co-operation and collaboration* between the *higher education* and the *FET/TVET sectors*, and within the higher education sector itself, by funding mobility of staff and students within a differentiated system.

xv. The funding framework should *encourage articulation* between different education institutions – for instance, by explicitly recognising programmes in one institution for continuation in another, or by funding joint programme offerings.

The funding framework should foster the transformational goals as articulated in Education White Paper 3 (DoE 1997). These include the following:

i. *Equity and redress* require fair opportunities to enter higher education programmes and to succeed in them. This transformational goal involves abolishing all existing forms of unjust differentiation and introducing empowerment measures, including financial support, to bring about equal opportunities for individuals and institutions.

ii. *Democratisation* requires that the decision-making processes at the systemic, institutional and Departmental levels are transparent, and that those taking and implementing decisions are accountable for the manner in which they perform their duties and use resources.

iii. *Development* requires that conditions be created to facilitate the transformation of the higher education system, to enable it to contribute to the common good of society. The contribution should be through the production, acquisition and application of knowledge, the building of human capacity, and the provision of lifelong learning opportunities.

iv. *Quality* involves maintaining and applying academic and educational standards. This entails compliance with specific expectations and requirements as well as aiming for excellence.

v. *Effectiveness and efficiency* entail that institutions function in a way that leads to desired outcomes and that they make optimal use of available means.

vi. *Academic freedom* implies the absence of outside interference, censure or obstacles in the pursuit of academic work.

vii. *Institutional autonomy* entails a high degree of self-regulation and administrative independence with respect to student admissions, curriculum, methods of teaching and assessment, research, establishment of academic regulations and the internal management of resources generated from private and public sources. Institutional autonomy is, however, inextricably linked to the demands of public accountability.

viii. *Public accountability* requires that institutions receiving public funds be able to report on the following: the effective and efficient spending of the funds; the results that they achieve with the resources; and how they have met national policy goals and priorities.

1.5 Members of the main Committee and work streams, and secretarial support

Considering the work to be undertaken by the Committee and the expertise and skills required, the following members were appointed to serve on the Committee:

- Mr Cyril Ramaphosa (Chairperson);
- Dr Mvuyo Tom (appointed Deputy Chairperson by the Committee);
- Professor Ihron Rensburg;
- Professor Brian O'Connell;
- Ms Jenny Glennie;
- Ms Collette Caine;
- Dr Charles Sheppard;
- Ms Carol Deliwe;
- Professor Christopher R Malikane;
- Mr Feizal Toefy;
- Ms Brenda Swart;
- Mr Omega Shelembe; and
- Mr Shai Makgoba (appointed as a Committee member in July 2011).

The following members were co-opted or contracted to assist with the work of the Committee: Professor Antony Melck, Ms Vuyokazi Memani-Sedile, Dr Lis Lange and

Professor Johann Mouton. Two additional members, Dr Gerald Ouma and Professor Pieter Vermeulen, assisted the Committee as researchers.

Mr Shai Makgoba and Ms Brenda Swart provided secretariat support to the Committee. Other Departmental officials who were part of the review included Ms Jean Skene, Dr Engela van Staden, Dr Diane Parker, Mr Mahlubi Mabizela, Dr Rian Cilliers and Mr Firoz Patel. All logistical arrangements were provided by Mr Tiyani Kubayi.

1.6 Work streams

The Committee was divided into four work streams.

i. Work stream one – Experiential learning, community engagement, distance education and African languages

The focus of *work stream one* was on unfunded and under-funded components, including experiential learning and community engagement. In addition, the work stream focused on the funding implications of distance education and African languages.

In undertaking this task the work stream was tasked with the following:

a) Review current funding for higher education, with specific reference to distance education provisioning, and determine requirements and possible investments to enhance the offering of distance education, considering recommendations made in the newly drafted distance education policy (DHET 2012b).
b) Determine the requirement for funding for experiential learning, incorporating the other concepts such as work-integrated learning, service learning, community service, internships, workplace learning and work-based learning.
c) Determine financial requirements to fund the development of African languages and introduce African languages as an academic and scientific language within the higher education system.
d) Conduct a cost analysis to determine the financial requirements for ensuring the effective implementation of community engagement activities.

ii. Work stream two – Block and earmarked grants

The focus of *work stream two* was on the analysis of block and earmarked grants. This work stream assessed the split between the block grant allocation and the earmarked grants. The work stream was responsible for determining the following:

a) Whether the proportions of government funds allocated to the block and earmarked grants should be changed from those currently applied; and, if so, what criteria should govern such changes.
b) Whether new subcategories should be introduced in the block grant and earmarked categories; and, if so, what criteria should govern such changes in the subcategories making up the block and earmarked grants.
c) The funding requirements related to general infrastructure developments, including recommendations made on infrastructure development for student accommodation/residences.

In undertaking this task the work stream was tasked with the following:

i. Consider the various revenue streams (first-, second- and third-stream) from 2005–10.
ii. Review the reserves (if any) of universities and determine the obligations in relation to those reserve funds.
iii. Be sure to draw on the experiences of other countries in funding higher education.
iv. Reflect on best practices and challenges in accounting for all resources allocated.
v. Research and suggest means for ensuring the effective use of block grants and earmarked funds by universities.
vi. Focus on ensuring the financial viability of the entire university sector.

iii. Work stream three – Historically disadvantaged institutions, rural universities and merged universities with multi-campuses

The focus of *work stream three*[9] was on HDIs, rural universities and merged universities with multi-campuses. The main focus of the work stream was reviewing and determining

[9] The work of this work stream was later collapsed into work stream two.

the funding requirements of HDIs, rural universities, and merged universities with multi-campuses. In undertaking this task the work stream was tasked with the following:

i. Define, analyse, and identify resource requirements in the types of institutions specified.
ii. Given the imbalances of the past, ensure the recommendations are clear in relation to how the gap between rural and urban-based higher education institutions should be addressed (for example, should the resources be allocated from the current funding framework, or through a one-off special grant)?

iv. Work stream four – Funding grid

The focus of *work stream four* was on the review of the funding grid with regard to funding levels. This work stream assessed the funding grid looking specifically at over- and under-funding, and thereafter made the necessary recommendations. It also considered the funding levels of CESM categories in relation to the funding group.

The Committee is accountable to the Minister of Higher Education and Training and was initially expected to provide the Minister with a report within a period of eight months from commencing its work. The Committee commenced its work in August 2011 and in April 2012 requested from the Minister an extension of six months, which was granted. The Committee provided its first report to the Minister in September 2012 with the intention of providing the final draft report at the end of November 2012.

1.7 Methodology applied

The Committee entertained a thorough and consultative process, inviting written submissions from higher education role-players with regard to the funding review. Universities and other role-players were also invited to make presentations to the Committee on various aspects of the funding framework. A detailed research questionnaire covering every aspect of the funding framework was distributed to universities with a request for their inputs. All of the inputs received were analysed, and scenarios were

developed and modelled on the proposals received. Based on all of the inputs received and the analyses done, the work streams then developed recommendations, which were presented to the main Committee for approval.

1.8 Consultation of interest groupings in the review

The Committee made use of two national newspapers, the *Mail & Guardian* (26 August 2011) and *The Daily Sun* (7 and 8 September 2011) to call for submissions. In addition to running newspaper advertisements, the Committee secretariat both gazetted the call for submissions, and circulated the call for submissions to a number of organisations all involved in higher education, including public higher education institutions, HESA, higher education student organisations, labour organisations, government departments and other relevant stakeholders.

The Committee received nine written submissions and this number was deemed to be insufficient. Given the importance of university funding, the Committee thus sent out invitations to all public universities to make a presentation; as a result, all but one of the institutions, which indicated that its submission formed part of the HESA consolidated submission, had an opportunity to present their case and recommendations to the Committee in November 2011. The Education Deans Forum also made a presentation to the Committee. Formal student organisations, labour organisations within the higher education sector, and the DST and the NRF made presentations to the Committee between July and August 2012. (See Annexure A for details.)

1.9 Structure of the report

In the early sections of the report the focus is on the role of higher education in development, the vision and goals for higher education in South Africa, and differentiation of the higher education system and the funding implications of differentiation.

The report then provides three overviews: an overview of the effectiveness and shortcomings alike of the current funding framework in achieving the transformational goals set for the system; an overview of international higher education funding approaches; and

an overview of the workings of the current South African funding framework and recommendations regarding the overall architecture of the funding framework.

The report discusses the level of government spending on higher education in South Africa compared to international trends and makes recommendations in this regard, together with recommendations pertaining to accountability and how the Minister of Higher Education and Training should deal with over- and under-enrolments in the system.

The report discusses the challenges faced by HDIs and the Committee makes recommendations that will in the short, medium and long term improve the levels of development and efficiency of these institutions.

The report provides an overview of the funding components impacting on teaching and learning, and puts forward recommendations for the funding of these activities. The recommendations encompass the teaching input grant (including the funding grid), the teaching output grant, work-integrated learning and community engagement, open and distance learning, the clinical training of health professionals, funding for veterinary sciences, the development of African languages, and access to higher education for students with disabilities.

In the section on research and innovation the report provides an overview of the performance of universities with regard to research outputs and areas that need improvement. In this section the Committee's recommendations with regard to the funding of research and innovation aim at achieving improved levels of research and innovation as well as improved quality of research outputs.

This is followed by an overview of funding components that contribute to university development. The Committee makes recommendations with regard to foundation programme provision, and teaching and research development, as well as the development of the next generation of academics. An overview of infrastructure developments, infrastructure maintenance and the establishment of new universities is provided, with recommendations pertaining to the funding of these components in the system.

Finally, the report makes recommendations with regard to student fees, which are a significant source of income for universities. The Committee also makes recommendations with regard to NSFAS, since this is a critical enabling instrument for providing access to higher education for poor students.

2. The role of higher education in development

2.1 Introduction

It is widely acknowledged that higher education has a crucial role to play in the overall development of society. Specific to Africa, the critical developmental role of universities in fact informed the establishment of these institutions. Historically, therefore, African universities were established as engines of development, their primary mandate being to assist the emerging independent states to modernise, to accelerate human capital formation and also to address basic existential challenges faced by local populations (Ajayi et al. 1996; Yesufu 1973; Wangenge-Ouma & Fongwa 2012).

Many changes have taken place since the establishment of the first universities in Africa. Our societies have changed drastically. We live in an era characterised by a technological revolution, globalisation, and the rise of the knowledge economy, among other catalytic changes. At the heart of these catalytic changes is the understanding that knowledge is critical in responding to, engaging with, managing, and optimising the benefits of these changes for both the 'survival' and advancement of our societies. In the face of these changes, it can be argued that higher education has become more important than ever before in the history of humankind.

In South Africa, in addition to the global changes mentioned above, we are also confronted with significant challenges, which place a special responsibility on higher education to develop requisite skills and expertise, and produce useful knowledge to assist in mitigating them. These challenges, identified in the National Planning Commission's report *Diagnostic Overview* (NPC 2011), include: high levels of unemployment, skills shortages in important sectors of the economy, a resource-intensive economy, a poorly performing school sector affecting the country's marginalised populations the most, a widespread disease burden, and social and racial divisions.

The affirmation of the critical role of higher education in the development of our country by the *National Development Plan 2030* (NPC 2012) was very reassuring. The Plan acknowledges the following:

> Universities are key to developing a nation. They play three main functions in society. Firstly, they educate and train people with high-level skills for the employment needs of the public and private sectors. Secondly, universities are the dominant producers of new knowledge. Universities also set norms and standards, and determine the curriculum, languages, and knowledge, ethics and philosophy underpinning a nation's knowledge-capital. South Africa needs knowledge that equips people for a society in constant change. Thirdly, given the country's apartheid history, higher education provides opportunities for social mobility and simultaneously strengthens equity, social justice and democracy. In today's knowledge society, higher education underpinned by a strong science and technology innovation system is increasingly important in opening up people's opportunities. (NPC 2012: 262)

Until recently, there had been a longstanding belief that the contribution of higher education to economic development in Africa was negligible compared to that of primary and secondary schooling. As is well known, this belief led the international development community to encourage African governments to 'disinvest' in higher education. Even though this thinking has since been rejected, the experience of these countries should be a lesson to us. The many years of under-funding higher education in many African countries had two key effects: firstly, it compromised universities' own existence as vibrant knowledge institutions; and consequently, secondly, it compromised these institutions' ability to make a significant contribution to the development of their countries. Student numbers often increased faster than the capacity to plan for and finance this growth, critical infrastructure became neglected, and many talented academics and scientists left for greener pastures overseas (Wangenge-Ouma 2007). An important lesson learned from this experience should be that for universities truly to act as engines of development, society must invest in them. Society must assist these institutions to develop their core capacities in order that they are able to play their role in society in an effective manner.

2.2 Higher education, innovation, and socio-economic and technological development

The widespread recognition that higher education is a *major driver of economic competitiveness* in an increasingly knowledge-driven global economy has made high-quality higher education more important than ever before in industrialised and developing countries alike (Pillay 2010). Over the past couple of decades, *'globalisation'* and the emergence of the *'knowledge economy'* have given rise to new economic, social, political and cultural challenges to which nations, regions and higher education systems and

institutions are responding. It is widely acknowledged that in the context of these new challenges specific knowledge, competencies and skills – often referred to as 'human capital' – come to play an increasingly important role in development efforts, as do research, innovation and technological development (Castells 2002).

Knowledge production, accumulation, transfer and application have become major factors in socio-economic development and are increasingly at the core of national development strategies for gaining competitive advantage in the global knowledge economy (Santiago et al. 2008; World Bank 1999, 2002). Higher education institutions are seen by many as playing a key role in delivering the knowledge requirements for development. Higher education is an important form of investment *in human capital development*. In fact, it is a high level or specialised form of human capital whose contribution to economic growth is significant. It is correctly regarded as the "engine of development in the new world economy" (Castells 1994: 14).

Pillay (2010) observes that the *contribution of higher education to development* can be varied:

a) Higher education helps in the rapid industrialisation of the economy, by providing individuals with professional, technical and managerial skills.

b) In the current context of transformation of nations into knowledge economies and knowledge societies, higher education provides not only educated workers but also knowledge workers for the growth of the economy.

c) Higher education creates attitudes, and makes possible attitudinal changes, necessary for the socialisation of individuals and the modernisation and overall transformation of societies.

d) Higher education helps, through teaching and research, in the creation, absorption and dissemination of knowledge.

e) Higher education also helps in the formation of a strong nation-state.

Furthermore, there is increasing evidence that high levels of education in general, and of higher education in particular, are essential for the design and productive use of *new technologies* while they also provide the foundations for a nation's *innovative capacity*, and contribute more than any other social institution to the development of civil society (Carnoy et al. 1993; Serageldin 2000).This type of 'evidence' has led to a number of countries

putting knowledge and innovation policies, as well as higher education, at the core of their development strategies (Cloete et al. 2011).

A study conducted by Bloom et al. (2005) supports the idea that expanding higher education may promote faster technological catch-up and improve a country's ability to *maximise* its *economic output*. According to these scholars, by 2005, Sub-Saharan Africa's production level was about 23% below its "production possibility frontier". They concluded that, given this shortfall, increasing the stock of higher education by one year could maximise the rate of technological catch-up at a rate of 0.63 percentage points a year, or 3.2 percentage points over five years. They further observed that accelerating technological catch-up is necessary in order for Africa to maximise its potential to achieve greater economic growth.

Higher education provides significant public and private benefits. Discussions on the benefits of higher education have unfortunately tended to focus on private benefits, especially the higher salaries earned by university graduates. Public benefits tend to be under-emphasised. Universities are primarily about knowledge; that is to say, knowledge creation and transfer are central to their raison d'être. It is a truism that the knowledge produced by universities has for many years been of enormous value to society. This knowledge, through research, has tremendously impacted on the quality of all aspects of human life, namely: improvements in health, improved food production, technological advancement, and economic growth and development. The Institute for Higher Education Policy (1998) provides a very good overview of the array of higher education benefits. These are captured in Diagram 3 (below).

It seems that a country's higher education participation levels have a bearing on the benefits that accrue to higher education. According to Pillay (2010), research has suggested a *strong association between higher education participation rates and levels of country development*. As shown in Table 6 (below), countries with a higher education participation rate under 10% tend to have economies that are "factor driven", meaning that such countries compete on their factor endowments, which are mainly unskilled labour and natural resources. From 20% participation rate upwards, countries tend to become "efficiency driven". They develop more efficient production processes and increase product quality. "Innovation-driven", knowledge economies such as Finland, South Korea and the United States, have participation rates exceeding 80%. These economies are

characterised, in the main, by high levels of innovation, and production of new and different goods and services using the most sophisticated design and production (Pillay 2010). As evidenced by the high participation rates, innovation economies require a strong knowledge workforce, including researchers, scientists, managers, engineers, technicians, designers and architects, among others.

Diagram 3: The array of higher education benefits

	Public	Private
Economic	• Increased tax revenues • Greater productivity • Increased consumption • Decreased reliance on government financial support	• Higher salaries and benefits • Employment • Higher savings levels • Personal/professional mobility
Social	• Reduced crime rates • Increased charitable giving/community service • Social cohesion/ appreciation of diversity • Improved ability to adapt to and use technology	• Improved health/life expectancy • Improved quality of life for offspring • Better consumer decision making • Increased personal status • More hobbies, leisure activities

Source: Institute for Higher Education Policy (1998: 20)

Table 6: Participation in higher education, and stage of development

Country	Stage of development (2009–10)	Gross higher education enrolment rate (2008)	Overall global competitiveness ranking (2010–11)
Ghana	**Stage 1** Factor driven	6	114
Kenya		4	106
Mozambique		2	131
Tanzania		2	113
Uganda		4	118
Botswana	Transition from **1 to 2**	20	76
Mauritius	**Stage 2** Efficiency driven	26	55
South Africa		18	54
Finland	**Stage 3** Innovation driven	94	7
South Korea		98	22
United States		82	4

Source: Schwab (2010: 11, 15, 419)

Finally, higher education has become a critical element in countries' quests for equality of opportunity across socio-economic, gender and racial categories (Anderson & Hearn 1992). Higher education is therefore a crucial means for reducing inequalities in society. Pillay (2010) cites the example of Brazil to demonstrate the important role of higher education in mitigating inequalities in society. In 1994, South Africa and Brazil had the same higher education participation rate of 8% and an income Gini coefficient of over 0.6, making both countries among the most unequal in the world. Part of Brazil's equalisation policy was to increase higher education participation, which is now over 35% (mainly through private higher education provisioning), and its income Gini coefficient is now around 0.5; while for South Africa it is now 0.7 – making South Africa one of the most unequal societies in the world.

2.3 Conclusion

The value of higher education cannot be overemphasised. As the foregoing discussion has shown, it is not just a ticket to good jobs and middle class lifestyles. It is, as described by Castells (1994: 14), the "engine of development in the new world economy". It is central to our long-term advancement as a country experiencing significant developmental challenges. Accordingly, it should be emphasised that not a single one of our development aspirations, plans, strategies and priorities – for example, the *National Development Plan*

2030, the *New Growth Path* and the *Human Resource Development Strategy for South Africa* – can sustainably be realised if we ignore the need to invest in our higher education, both in supporting student participation and improving the capacities of our universities to deliver on their tremendous potential.

3. Vision and goals for higher education, and differentiation of the university system

3.1 Vision and goals for higher education

i. Introduction

South Africa has 23 public universities, with an enrolment (in 2011) of 938 201 (DHET 2012e). The 23 universities comprise 11 universities in the traditional sense, six universities of technology (what used to be known as technikons), and six comprehensive universities, which combine the functions of traditional universities and universities of technology.

The *National Development Plan 2030* (NPC 2012) acknowledges the importance of higher education as the major driver of the information/knowledge system, linking it with economic development. According to the NDP, higher education is much more than an instrument for economic development, and is also important for good citizenship and enriching and diversifying life. Good-quality science and technology education provided by universities plays a vital role in innovation and development and is crucial for South Africa's development. Similarly, the humanities programmes offered by universities are important for enabling understanding of some of the challenges the country faces, such as the need for transformation, service delivery, education and innovation, and issues of violence, corruption, the gap between rich and poor, gender and race (ASSAf 2011).

Universities are vital to achieving the vision and targets of the *National Development Plan 2030* (NPC 2012), and must produce all the high-level skills required to give effect to this plan. They need to train the school and college teachers vital for the renewal of the poor education and training system; they need to deliver the researchers and academic staff of the future; and they are the leading agents in knowledge production and innovation. Universities must produce the professionals for the improvement of the health system, as well as highly skilled professionals in other disciplines, for the public and private sectors.

The Shanghai Jiaotong Academic Ranking of World Universities 2008 placed South African higher education between 27 and 33, along with the Czech Republic, Hong Kong, New

Zealand and Ireland. For a developing country, this is an exceptional rating, but it can do better and is under-performing in a number of key areas (Badsha & Cloete 2011).

In this section of the report we provide a brief overview of the vision and goals for higher education for 2030, as well as the challenges faced by universities in achieving these goals, and strategies for overcoming the challenges. Two recent publications have paid extensive attention to these topics: namely, the *National Development Plan 2030* (NPC 2012) and the Green Paper for Post-school Education and Training (DHET 2012d).

ii. Vision for higher education, 2030

The vision for higher education for 2030, as defined by the *National Development Plan 2030* (NPC 2012), is as follows:

1) Each university will have a clear mission that sets out its unique contribution towards knowledge production and national development.
2) Universities will be an integral part of the post-school system, and will be well articulated with the school and college systems to allow for mobility of learners and staff between these different parts of the education system.
3) Universities will be efficient institutions, characterised by increased knowledge productivity units, throughput rates and graduation and participation rates.
4) The country will have a diverse national innovation system that consists of a range of world-class centres and programmes specialising in areas that address national priorities, including African languages and indigenous knowledge systems. The innovation system will draw on the many sites of knowledge and innovation within society.
5) By 2030, 75% of university staff will hold PhDs. The PhD graduates, either as staff or post-doctoral fellows, will be the dominant drivers of new knowledge production within the higher education and science innovation systems.
6) Universities will be centres of excellence based on their identified areas of strength, responding to the needs of their immediate environments, the needs of the African region and the requirements of global competitiveness.
7) The university system will be diverse and differentiated, based on the strengths and areas of specialisation of each university.
8) Universities and the national innovation system will be welcoming and supportive environments for black and female students and researchers.

9) Private higher education institutions will play a greater and better-defined role in the higher education landscape.

iii. Targets set by the NDP 2030 for higher education, science and technology

The *National Development Plan 2030* (NPC 2012) recommends the following targets for the higher education science and technology sector for 2030:

1) The school sector needs to increase university science and mathematics entrants to 450 000. This is necessary because the number of people embarking on careers in science and technology should be at least three times the current levels.
2) The number of graduates needs to increase from the current (2011) 177 694 (DHET 2012e) for public higher education institutions to a combined total of 425 000 by 2030, with a significant increase in science, technology, engineering and mathematics graduates.
3) Participation rates need to increase to more than 30%, which translates to a 70% increase in enrolments – from the current (2011) approximate 940 000 (DHET 2012e) to 1.68 million.
4) South Africa needs to produce more than 100 doctoral graduates per million of the population, compared to the current 28 PhD graduates per million per year. This means that we have to produce five times more PhD graduates per year than currently.
5) The percentage of PhD qualified staff within the higher education sector must be increased from the current (2011) 37% (DHET 2012e) level to 75%, and the number of graduate, postgraduate and first-rate scientists must be doubled.
6) The number of African and women postgraduates must be increased, especially with regard to PhDs in order to improve research and innovation capacity and normalise staff demographics.
7) South Africa should develop a few world-class centres and programmes within both the national system of innovation and the higher education sector over the next 20 years, in areas of comparative and competitive advantage, including indigenous knowledge systems.
8) South Africa should establish itself as a hub for higher education and training in the region capable of attracting a significant share of the international student population.

iv. Challenges for achieving these goals

The *National Development Plan 2030* (NPC 2012) acknowledges that the South African higher education system functions relatively well, but still faces the following major challenges: low participation rates, high attrition rates, a curriculum that does not speak to society and its needs, the absence of an enabling environment that allows every individual to express and reach full potential, and poor knowledge production that often does not translate into innovation. The NDP further observes that while knowledge creation and transfer is the rationale for higher education, high-quality knowledge production cannot be fully realised with a low student participation rate, a curriculum or environment that is alienating and does not articulate the vision of the nation, and an academic staff that is insufficiently qualified (only 37% of the country's higher education academic staff held PhDs in 2011) (DHET 2012e).

The *National Development Plan 2030* (NPC 2012) observes that massive investments in the higher education system have not produced better outcomes in the level of academic performance or throughput rates. Although enrolment and attainment gaps have narrowed across different race groups, the quality of education for the majority has remained poor at all levels and the higher education system therefore tends to be a low-participation, high-attrition one.

The challenges that universities face are also summarised in the Green Paper for Post-school Education and Training (DHET 2012d):

1) The disadvantaged universities, particularly those in the rural areas of the former Bantustans, are still disadvantaged in terms of infrastructure, teaching facilities and staffing. Coupled with this, there are some institutions within the system that continue to show signs of instability and dysfunction (Badsha & Cloete 2011).
2) In the advantaged universities that have a significant number of black and women students, these students face multiple disadvantages such as racism, discrimination, sexism and an alien university culture.
3) The unequal schooling system disadvantaged mainly black students, and this is reflected in their poor performance in the post-school system.
4) Disabled students have few opportunities and face discrimination.

5) There is undue pressure on universities to provide post-school learning opportunities even beyond their capacity, as a result of the weak college sector with low enrolments.
6) In a number of universities the quality of teaching is poor.
7) Work-based training is inadequate and the placement of students to obtain their work-integrated learning experience is problematic, in many cases preventing students from graduating.
8) The funding models are biased towards universities that are already strong.
9) Student financial aid and student funding are still insufficient.
10) Research outputs in terms of research publications have increased markedly since 1994, but the number of researchers has not increased proportionally. A possible reason for this is that the funding has encouraged greater research productivity per researcher, but there are insufficient postgraduates being produced to replenish the supply of researchers in the population.
11) The increased production of masters and doctoral graduates is essential in producing the next generation of academics and researchers. The DST's *Ten-year Innovation Plan* (DST 2008) states that PhDs in science, engineering and technology must increase five-fold.
12) The NQF is complex and not well understood and there is not a clear demarcation between the functions of the three quality councils.[10]

v. Strategies to overcome these challenges

The *National Development Plan 2030* (NPC 2012) recommends the following strategies to enable universities to achieve the vision and goals for higher education:

1) There should be a national plan for higher education, which includes the promotion of innovation and the development of knowledge. The plan should be developed in collaboration with universities, science councils, state-owned enterprises, private industry and research institutes. It is, however, vital that this plan be appropriately funded, including the poorly resourced institutions, and closely linked to the nation's long-term needs in terms of human resource development and knowledge production.

[10] Namely, Umalusi, the HEQC and the Quality Council for Trades and Occupations (QCTO)

2) A differentiated system needs to be encouraged that allows all universities to build on their individual strengths and respond to the needs they identify.
3) Differentiation in the sector should be enabling and developmental, based on a recognition that higher education has to fulfil many functions and that no single institution can serve all of society's needs. Differentiation needs to take place in a context that takes account of social justice and equity imperatives. This means that HDIs must be given adequate support and incentives to develop their own areas of excellence in both research and teaching.
4) Universities need to make significant progress in gender and racial transformation, in order to reduce gender and racial disparities, so that women and Africans make up more than 50% of research and teaching staff.
5) The state needs to provide effective and enabling regulation so that private education institutions can fulfil a more meaningful role in the higher education landscape. The regulatory system must ensure that these institutions are well run, provide stimulating learning environments for students and adhere to high standards of corporate governance.
6) South Africa needs to build a properly qualified, professional, competent and committed teaching, academic, research and public service cadre.
7) The innovative capacity of the nation must be enhanced. It is acknowledged that higher education is one of the main contributors to developing science, technology and innovation, which in turn improves national development. Other means of enhancing the country's innovative capacity include the relaxation of immigration requirements for highly skilled science and mathematics teachers, technicians and researchers. In order to achieve improved innovative capacity the national system of innovation needs to function in a coherent and co-ordinated manner, with broad, common objectives aligned to national priorities.
8) The innovation system should be complemented by the enhancement of the entrepreneurial capability of the nation through the design, introduction and teaching of entrepreneurship skills.
9) The decline in the humanities must be addressed and the higher education system as well as the science and innovation system should invest in and build capacity and high-level expertise in the humanities.
10) Participation targets need to be set and translated into institution-level targets and a planning model should be developed that builds and strengthens the current enrolment planning approach. The planning needs to cover targets for enrolments and graduates for the range of skills needed, and decisions need to be taken about which type of institution contributes most effectively to which skill level. The enrolment

planning must include specific plans for priority professional sectors such as health, engineering, the built environment and teaching. Attention must also be paid to infrastructure needs, including new facilities to train medical and other health professionals. There also need to be closer links between economic and education planning, with stronger incentives for developing scarce skills and an expansion of the public sector. Plans and resources are needed to increase career-focused higher education certificates and diplomas.

11) Better co-ordination is needed between the DHET and the DST, to support knowledge production. The production of PhDs should be increased to replace the current, ageing cohort of researchers and to increase the percentage of academic staff with doctorates.
12) South Africa needs to strengthen research excellence through performance-based grants, in conjunction with capacity-building grants with clear targets for improvement in five-year intervals.
13) Progressive differentiation requires that all universities provide high-quality education and skills training, underpinned by common standards for student facilities, libraries, laboratories, computer access and staff qualifications. Adequate resourcing will thus be needed to enable HDIs to achieve these minimum standards and overcome historical backlogs.
14) The efficiency of the universities needs to be addressed by focusing on improving the quality of teaching and learning support, improving the quality of higher education through flexible curricula, encouraging excellence in teaching, providing technology to support teaching and learning, continuing to provide support for academic development and the professionalism of teaching in higher education, and making the education environment more welcoming for black students, students from poor backgrounds and women.
15) A range of flexible pathways and opportunities for developing students' skills must be provided through national guidelines to facilitate student mobility.
16) The quality assurance framework will have to be reviewed in the light of an expanded and diversified system, and the HEQC must develop and manage a core set of quality indicators for the higher education system. A national graduate-tracking system should be considered as a proxy for quality.
17) The HEMIS needs to be maintained and strengthened in order to guide a differentiated system by means of evidence-based planning and performance monitoring.
18) The revision of the funding framework for universities should be based on the needs of a differentiated system, with adequate provision for teaching and research alike.

19) As the quality assurance and monitoring system matures, greater emphasis should be placed on output-based funding, but with measures in place to ensure that this approach will not discourage universities from taking students from deprived backgrounds.
20) All students qualifying for NSFAS support should receive adequate funding to cover the full cost of study, and students who do not qualify should have access to bank loans, backed by state sureties. NSFAS loans and bank loans alike should be recovered through arrangements with the South African Revenue Service (SARS).
21) Student financial aid should over time be expanded to include eligible students at registered private universities.
22) Additional funding for higher education will be needed, to support an increase in participation and knowledge production while ensuring that quality is preserved.
23) Institutions that are facing ongoing crises despite earlier recovery interventions should be provided with dedicated support to develop and implement comprehensive renewal plans over five years. If measurable progress towards achieving the objectives is not evident after five years, consideration should be given to reviewing the status of the institution.

According to the Green Paper for Post-school Education and Training (DHET 2012d), the following strategies are needed to achieve the goals set for the university sector:

1) One of the means of achieving higher participation rates for the university sector would be the expansion of distance education provision across the sector. More of the well-placed universities in terms of capacity and resources will have to participate in distance education offerings. Expansion will include two new universities: one in Mpumalanga and one in the Northern Cape.
2) The major policy thrusts for universities in the immediate future will be to achieve improved success and throughput rates, more and better research and innovation, and improved access for students through the expansion of the university sector's capacity as well as the expansion of NSFAS.
3) A differentiated university sector will have to be developed, since not all universities can or should fulfil the same role. The university sector should comprise a continuum of institutions, ranging from specialised, research-intensive universities to large undergraduate institutions with various levels of research focus and various postgraduate niches at masters and/or doctoral level.
4) African language teaching needs to be expanded, and these languages must be developed into languages of science and the academy.

5) Postgraduate outputs must be expanded and the next generation of academics needs to be developed.
6) An improved funding formula needs to be developed and existing backlogs in the HDIs need to be eradicated.
7) Partnerships must be formed between employers and universities to assist with the required workplace placements for students.
8) The Sector Education and Training Authorities (SETAs) must allocate more of their resources to full occupational training programmes and not just short courses.
9) The NQF must be streamlined, simplified and made easier for users to understand, and must tackle unintended consequences with regard to qualifications that fail to articulate easily with the rest of the system – e. g. the National Certificate Vocational (NCV) and the B Tech.
10) Although the regulatory role of professional bodies is acknowledged as important for safeguarding professional standards, they should not be gatekeepers who seek to restrict the supply of professionals.
11) All institutions in the post-school sector should reinforce one another. Universities should step up their research on the labour market and the skills development institutions, including the SETAs, FET/TVET colleges and community education and training centres. Universities should train college staff. Equally, SETAs should fund and support public higher education institutions and help them to build relationships with employers.
12) Work-integrated learning will ensure students get the necessary combination of theory and practice. There is a pressing need to build the National Skills Accord, to ensure that all employers provide workplace experience in the form of apprenticeships, learnerships and internships.

vi. Conclusion

The higher education system – through its production of high-level skilled individuals, through knowledge creation and transfer and through its contribution to research and innovation – is a key player in the achievement of the goals and targets of the *National Development Plan 2030* (NPC 2012). In the interests of achieving these goals, it is crucial that the quality of the learning and teaching experiences of the higher education sector be improved. The inefficiencies in the system – with regard to low levels of production of graduates at undergraduate level, and more worryingly low levels of production of graduates at postgraduate level – need to be addressed if the universities are to deliver the

skills needed for development. The levels and quality of research outputs must be improved and the number of masters and doctoral graduates needs to increase dramatically to accelerate knowledge production and innovation needed for the development of the country. A prerequisite for the acceleration of knowledge and research outputs is the improvement of the qualification levels of academic staff at universities. The capacity of the higher education system needs to be expanded to ensure that higher education participation rates are significantly increased, since there is a clear relation between higher education participation and economic development.

It is vital that the challenge of under-development of some of the universities and the fact that some of the universities are in constant crisis be addressed, to ensure that these institutions become fully functional and able to contribute at much higher levels to the targets envisaged for the sector. These institutions need to be appropriately resourced and supported to be able to cast off their historical legacies. The concept of a differentiated system is emphasised. Differentiation should build on the unique strengths and centres of excellence – both existing and potential – of each and every university. One outcome of the current funding review should be that both teaching and research are adequately funded, and that in the near future as a minimum all universities can offer the same quality learning and teaching experiences at undergraduate level. Planning for the system needs to be enhanced to ensure better alignment with national needs and strategic priorities.

3.2 Differentiation of the university system, and funding implications

i. Introduction

The differentiation debate has been ongoing in South Africa. It touches on the core of universities' visions, missions and aspirations. Various inputs have been received from universities and are summarised in this section, and recommendations with regard to differentiation and funding implications are made.

ii. Inputs received from role-players

a) Differentiation and diversity

i. Differentiation and diversity, two closely related but separate concepts, are both important in the current higher education environment.

- *Diversity* has been promoted strongly since 1994, often through emphasising the benefits of an inclusive culture in which the roles of South Africa's many cultures, languages, religions and races are acknowledged and given their rightful places. In the context of higher education, it is argued that diversity (which takes place intra-institutionally) is conducive to generating new ideas and hypotheses, interrogating stereotypes, and overcoming former prejudices, and therefore is important in creating a progressive academic environment in which inquiry is a core function. Universities should therefore encourage diversity in their student and staff bodies.
- *Differentiation*, as used in debates on higher education, refers to what could take place inter-institutionally, that is, between institutions. Differentiation implies that all institutions should attempt to establish their own defining characteristics, through the conceptualisation of, as far as possible, unique vision and mission statements that do not overlap with those of neighbouring institutions. In essence, the call for mission differentiation in the NPHE document (MoE 2001) emphasises the need for institutions to describe carefully the positive attributes that "lift them out" or "make them different from" their peers.
- The underlying justification for differentiation is that it will generate the innovation and educational or intellectual development required by a nation. It also makes *specialisation* in the higher education sector possible, which, according to organisational theory, fosters excellence and ensures the greatest returns on the use of limited resources. This is especially true for costly forms of research in very expensive fields such as, for example, heart transplant surgery. It is also argued that not even the richest countries can afford to turn all of their universities into research universities; poor and developing countries even less so.
- *Developing countries should maintain a number of research-intensive universities*, not for competing with research universities in the developed world, but for addressing important issues of relevance to developing economies.
- Specialisation is not only important in research; it can also be expected to be beneficial to teaching. *Specialised teaching institutions* fulfil important functions in most higher education systems.
- Differentiation need not be at institutional level but could be at programme or departmental level. This was the intention with the introduction of the PQM process in the NPHE and the encouragement given to mission differentiation.

ii. Proposals have also been made of differentiation along a gradient of research-intensive versus teaching-intensive universities; this is, however, generally contested by the HDIs, who argue that such an approach would tend to lock them into the restrictions and constraints of their apartheid past. The current system-differentiation debate over-emphasises institutional typologies and fossilised historical disparities at the expense of the need to produce and deliver concrete national and regional socio-economic development with attendant benefits. While the history of an HDI can be used to make a determination of where it stands, a progressive institutional development trajectory over the short to medium term is rather needed. The hard and unfair differentiation along the lines of research-intensive to teaching-intensive institutions would not improve the responsiveness of the public higher education institutions in harnessing the intellectual and creative potentials of our people, as mandated by the Education White Paper 3 (DoE 1997).

iii. A greater and more nuanced differentiation of higher education institutions than is currently the case is supported, in order to allow them to develop along different trajectories that best suit their visions, missions and strategies for academic excellence and financial viability. Differentiation will promote the attainment of specific outcomes for particular institutions, such as HDIs, and the collective outcomes from differentiated institutions must facilitate attainment of national objectives in an efficient, effective and sustainable manner. The result would be a more robust and resilient higher education landscape. Remediation of legacy effects, whether infrastructural, staffing, or student body related, should be part of a process, rather than a set of end-point outcomes.

iv. Differentiation need not be at institutional level. State funding can support universities to achieve excellence in strategically selected areas of research and innovation. Differentiation could thus be at programme or departmental level.

v. Effective ‘system differentiation’ in core academic and development mandates and capacities – as opposed to restrictions on programme and qualification mixes – would enable the system to respond more quickly to differing intellectual and human resource scenarios in line with national and regional development needs.

vi. A proposal was made that system capacity development and improvement funding be made available on a *regional* basis, provided that the regional institutional cluster also included a mix of institutional typologies with enhanced student mobility between institutions as the intended outcome. This should include, among other things, a cluster-wide integrated research and development programme that is geared towards

socio-economic innovation in support of reconstruction and development, as well as enhanced regional skill and technological competitiveness.

b) Funding implications

i. If funding is allocated in relation to the costs of the different activities, a natural form of differentiation will be supported. Institutions that concentrate on teaching undergraduates will be financed differently from those whose emphasis falls on postgraduate students and research, simply because the costs of these different activities differ.

ii. Universities have three core purposes: the production of graduates through teaching and learning; knowledge production through research, and community engagement. Each university must, in accordance with its negotiated specific mission and within an overall policy of *differentiation*, be adequately supported to undertake these core purposes in some or other appropriate combination. Although community engagement is meant to be part of the core, it is often outside of teaching and learning, which is not ideal.

iii. One of the major stumbling blocks to fostering diversity and transformation is the problem of retaining black academics. Consideration should be given to introducing (financial) incentives in the university funding formula to assist universities in addressing this challenge.

iv. It is critical that at the undergraduate level the quantity and quality of facilities, equipment and the like be equal across institutions, in order to ensure the production of high-quality undergraduates. The infrastructure and efficiency funding mechanism could be an important lever in this regard.

v. At the same time, due consideration has to be given to the resources required for the production of high-quality knowledge and postgraduates, which in a differentiated higher education system must necessarily be institutionally and programmatically distributed in accordance with the specific missions and capacities and capabilities of universities.

vi. A prudent balance must be found so as to ensure that undergraduate learning and teaching, postgraduate education and training and research, and community engagement are all effectively supported.

vii. As appropriate in relation to a policy of differentiation, consideration has to be given to the needs of universities relative to their different sizes.

viii. Not all institutions are equipped to provide the full range of programmes, the same quality of programmes, the same type of research, and the same level of training (undergraduate versus postgraduate). Institutions should be encouraged to address the needs for which they are best equipped, rather than trying to participate on a wide front. The quality of the output in these areas is particularly important for the development of the nation. Not all universities can offer veterinary science, or agriculture, or medicine. Some will be better suited – for reasons of their location – to addressing local community and regional needs. Others – because of their location, or historical networks, or traditional research foci – may be well placed to address global and universal concerns, such as astronomy, evolution, molecular structures, or particular languages. If one accepts this then it is likely that, at the research level, the same differentiation will result in different costs of research and different allocations to different institutions. The implicit allocations to research in addition to the explicit research output subsidy should recognise this differentiation.

ix. Although the current formula largely recognises this differentiation, costing and related subsidy must be accurate. Currently, undergraduate study often cross-subsidises postgraduate studies, particularly in natural sciences, or where one has to provide high student grants due to competition from the market for recent graduates (e.g. medicine, commerce, management). One option for dealing with this is to increase undergraduates to fund postgraduates; but the ratio continues to decline, and so such practices do not represent optimal use of resources. Another possible strategy for dealing with this under-funding in postgraduate studies in the natural sciences is the skewing of postgraduate enrolments towards subject areas where there are no laboratory or fieldwork costs, and where students will accept low teaching and research studentships due to low salaries or few jobs in the market (humanities, law). However, this leads to a proliferation of masters and PhDs that may not be what the market needs. The absence of NSFAS funding for postgraduate study also seriously compromises the ability of universities to attract postgraduate students, which then have to be funded from the core grant or research grants.

x. A more radical policy issue is whether South Africa wants or needs a few, world-class universities. It could be argued that it need not have *any*. It certainly does not need, nor could it afford, to have 23. But most countries have now adopted a strategy in favour of identifying a small number of universities that have the best chance of becoming truly globally competitive and investing heavily in them to get them to the required level. There is now a widely held view internationally in higher education (see Salmi 2009, and Salmi 2011) that the future of a country in an increasingly knowledge economy depends on having a handful of universities that are strongly

research and postgraduate oriented for national research and innovation. China, out of several thousand universities, wants to have two in the top 50 globally, and five in the top 100; Singapore, Malaysia, Japan, South Korea and recently several European countries have adopted the same 'concentration' strategy. In South Africa, the National Planning Commission, in the *National Development Plan 2030* (NPC 2012), states the following: "A few world-class centres and programmes should be developed within both the national system of innovation and the higher education sector over the next 18 years" (NPC 2012: 327). If South Africa wants to have a few such centres, they cannot be funded through a formula that gives everyone the same. To be a world-class university requires a specific investment in salaries, which need to be higher than the South African average in order to compete internationally for top scientists and retain our own, who are extremely mobile; it requires better-than-average staff-to-student ratios, to allow time for research and postgraduate teaching; it requires superior facilities and high-technology laboratories; it requires posts for post-doctoral students – which are not funded anywhere in the system since they are not students registered for degrees nor staff members doing teaching. It requires a specific strategy to increase postgraduate research students to levels well above the national average. This goes together with investment in research because masters, doctorates and post-doctorates require the existence of well-functioning research programmes with a critical mass of people and infrastructure. In South Africa, all higher education institutions should offer higher degrees. In some, the mix should be predominantly undergraduate, while in others there should be upwards of 30% of masters and doctorate students. Funding for strong research and masters and doctorate studies needs to be dedicated funding outside of the standard formula. We can get there if there is political will, and it should be clear that this is not at the expense of HDIs – they need to have their funding secured and historical backlogs remedied. Funding, for example, two universities at the level required to become world-class will not, however compromise the others, and will in time benefit the whole system, including through the production of the next generation of the highest quality academics for the country.

In summary: The following principles to guide future development and differentiation of the South African higher education system were developed at a HESA July 2011 workshop attended by the DHET, DST and HESA:

- The most important principle is that the country needs the entire spectrum of institutions for socio-economic development. The higher education sector should

comprise a continuum of institutions with the purpose of providing a range of access routes to a varied student population, and the social justice and equity agendas need to be addressed by the whole system.

- A variety of institutions are therefore required to ensure that the sector serves the varied needs of students, as well as the national interests. The mix and level of programmes of any institution should not be cast in stone – institutions must identify and enhance their strengths.
- All universities in South Africa must offer quality undergraduate education.
- The university system does not exist in isolation. It is an integral part of the post-school system, and inter-institutional and inter-system mobility for students and staff must be an integral part of the system.
- There is a need to reward equally the different roles of higher education in South African society: namely, teaching and learning, research, and community engagement. It is important to note that the aim is to continue to support the strengths of research-intensive institutions, and also to recognise other important functions of higher education institutions.
- A national plan should be developed in tandem with differentiation – meaningful differentiation will need serious co-ordination, and differentiation needs to be accompanied by an appropriate funding regime, including funding for poorly resourced institutions. Differentiation must be linked to the government's long-term *Human Resource Development Strategy for South Africa* (HRD-SA) (MoE 2009b) and its associated 20-year time horizon.

iii. Recommendations

The Committee supports the principles flowing from the HESA workshop on differentiation, and recommends the following:

i) All historical backlogs should be eradicated within the short to medium term at under-developed universities to enable all universities to offer the same quality undergraduate teaching and learning experience. The prioritisation of HDIs within the infrastructure and efficiency allocations is needed to give effect to this.

ii) The Committee acknowledges the role that knowledge production, research and innovation play in the development of a nation and recommends that research outputs and research capacity building be adequately funded and encouraged through funding.

iii) Each and every university should develop research capacity and participate in research and innovation, albeit to varying extents. Each under-developed university should develop a niche area, built on its unique strengths, and the development of such a centre of excellence at each of these universities should be supported through the research development funding on a project basis. The resources of the DHET and the NRF need to be aligned, together with possible donor funding, to give effect to the establishment of these centres of excellence at under-developed universities.

iv) The Committee will make specific recommendations with regard to research output, research input and research development funds, which will support the development of these centres of excellence and strengthen the research capacity of under-developed universities.

4. Overview of the effectiveness and shortcomings of the current funding framework

4.1 Background

This section of the report provides an overview of the performance of the university system in relation to the transformational goals articulated in Education White Paper 3 (DoE 1997) and the NPHE (MoE 2001).

The terms of reference for the review of the funding of universities as published in the government gazette, 3 June 2011, specify that

> …the committee must analyse the current funding framework to determine whether it has functioned effectively in achieving the goals set for it at its inception, and in particular, whether it has functioned effectively as a transformation-oriented steering mechanism.

The terms of reference further state that the committee,

> must determine how the links between the current funding framework and government's other steering mechanisms as set out in the *National Plan for Higher Education* of 2001 have functioned, and must formulate recommendations on any changes which may be needed to ensure that the agreed-upon principles are served.

Since the main goal of the current funding framework was, together with other mechanisms, to steer the performance of the university system towards the realisation of the transformational goals articulated in Education White Paper 3 and the NPHE, it is important that the performance of the higher education system vis à vis the current funding framework be examined to determine the extent to which transformational goals have been realised. This examination is undertaken in terms of a set of performance indicators related to the performance goals and targets set out in Education White Paper 3 and the NPHE.

The framework and indicators used in this section of the report are based on a set of goals, indicators and targets for the public university system developed by the Centre for Higher Education Transformation (CHET) in various reports published over the period 2004–12

(CHET 2004, 2010, 2012). Additional indicators are provided in this section to highlight the performance of universities with regard to the transformational goals.

4.2 Policy framework

The Higher Education Act (No. 101 of 1997) makes provision for the funding of higher education (Chapter 5 of the Act). The Act outlines that the intentions of government with regard to higher education, include the following:

a) The redress of past discrimination.

b) Ensuring representativeness and equal access.

c) Providing optimal opportunities for learning and the creation of knowledge.

d) Promoting the values that underpin an open and democratic society based on: dignity; equality; freedom; respect for academic freedom; the pursuit of excellence; the promotion of the potential of every student; and appreciation for diversity.

Chapter 5 of the Higher Education Act specifically addresses the funding of higher education:

> The Minister must, after consulting the CHE and with the concurrence of the Minister of Finance, determine the policy on the funding of public higher education, which must include appropriate measures for the redress of past inequalities, and publish such policy by notice in the Gazette.

The transformational goals for higher education articulated in Education White Paper 3 and the NPHE, and whose realisation is steered through the funding framework and other steering mechanisms, are as follows:

a) Improving access opportunities.

b) Increasing participation of disadvantaged students and of women.

c) Ensuring that enrolments increase in academic programmes linked to economic development and in postgraduate programmes at masters and doctorate level.

d) Improving the quality of teaching and research through enhancing the qualifications of academic staff.

e) Increasing the numbers of graduates produced by the university system.

f) Increasing the outputs of high-level knowledge products in the form of doctoral graduates and research publications.

As noted in the introductory section, the examination of the effectiveness of the framework in steering the higher education goals and targets mentioned above has been done according to the CHET framework. Funding is the primary lever for steering the system to reach the transformational goals set, but it is acknowledged that funding is but one of a range of factors and conditions that impact on the achievement of the transformational goals. For example, another condition that constrains the achievement of the transformational goals is the low levels of preparedness of students entering universities to deal with university-level academic work; this has been a major problem in South Africa.

4.3 Review of the performance of public universities

As already mentioned, following the collapse of apartheid, the key task facing the higher education system was the realisation of the transformational goals set for the sector. These goals have been realised to varying extents, as shown in Table 7 (below). The table shows how the sector has performed against eight key goals, indicators and targets adopted from recent CHET studies (2004, 2010 and 2012) on the review of the performance of public universities.

a) Goals 1 to 3: Participation rates

Figure 1 (below) indicates the gross enrolment ratio (GER) in the public university system in South Africa, by race group for the period 2001–10. The GER is defined as the total headcount enrolment of all ages divided by the total population in the 20–24 age cohort. Using the Statistics South Africa official mid-year population estimates for 2001–10 and the Spraque multipliers to get single-year breakdowns, as well as the DHET 2011 HEMIS tables, the GER by race was calculated for the period 2001–10.

Figure 1 shows that increases have occurred in the GER for Africans and coloureds during the period 2004–10. Differences in the GER of the various race groups have however remained diverse. By 2010 the GER for the various race groups was as follows: Africans – 14%, coloureds – 15%, Indians – 46%, and whites – 59%. The participation rate of African and coloured students is too low, particularly given that growth in the participation rate is to

be expected in future from these two groups. The overall participation rate of the system will not improve if the participation rate of these two groups does not increase dramatically. The participation rate can only be increased if more funding is made available for the expansion of the higher education sector.

Table 7: Goals, indicators and targets for the public university system

Adapted from the 1997 White Paper for the public higher education system	Basis for goals	Targets for the public higher education system
Student enrolments in the public higher education system		
Goal 1: Opportunities for entry into the system must improve	Social and economic development require large numbers of students to enter public universities	Gross participation rate of 20% by 2016
Goal 2: The participation of disadvantaged students in the system must increase	Equity requires access to public higher education to be equalised	Gross participation rates are equalised
Goal 3: The participation of female students in the system must increase		
Goal 4: Science, engineering and technology (SET) and business/management (BUS) enrolments in the system must grow	SET, finance and management are important drivers of economic development	Enrolment proportions to be 30% SET and 30% BUS
Goal 5: Masters and doctoral enrolments in the system must grow	Knowledge economies require increasing numbers of citizens with high-level qualifications	15% of enrolments to be masters plus doctoral students
Academic staff in the public higher education system		
Goal 6: The academic staff in the system must be well qualified	There is a strong correlation between the quality of knowledge outputs and the qualifications of academic staff	50% of permanent academics to have doctorates, and 40% to have masters degrees
Teaching and research outputs of the public higher education system		
Goal 7: The output of graduates of the system must improve	Increased levels of graduate outputs are required to meet the skills needs of the labour market	a) Growth in total graduates must exceed growth in enrolments b) Cohort completion rate to be 65%
Goal 8: The high-level knowledge outputs of the system must improve	Research outputs in the form of doctoral graduates and research publications are critical if South Africa is to participate in the global knowledge economy	a) Total research outputs must increase b) Ratios of doctoral graduates to permanent academics should be 0.15, and of research publications should be 1.0

Source: CHET (2004, 2010, 2012)

The growth in African and coloured enrolments has been much higher than for the other two race groups. Table 8 shows that African and coloured student enrolments grew on

average by 4.7% and 4.0% respectively per year during the period 2004–10. The funding framework provided incentives in the form of institutional factor grants for disadvantage. The provision of NSFAS loans and grants to poor students also contributed to these changes in the racial profile of the student population.

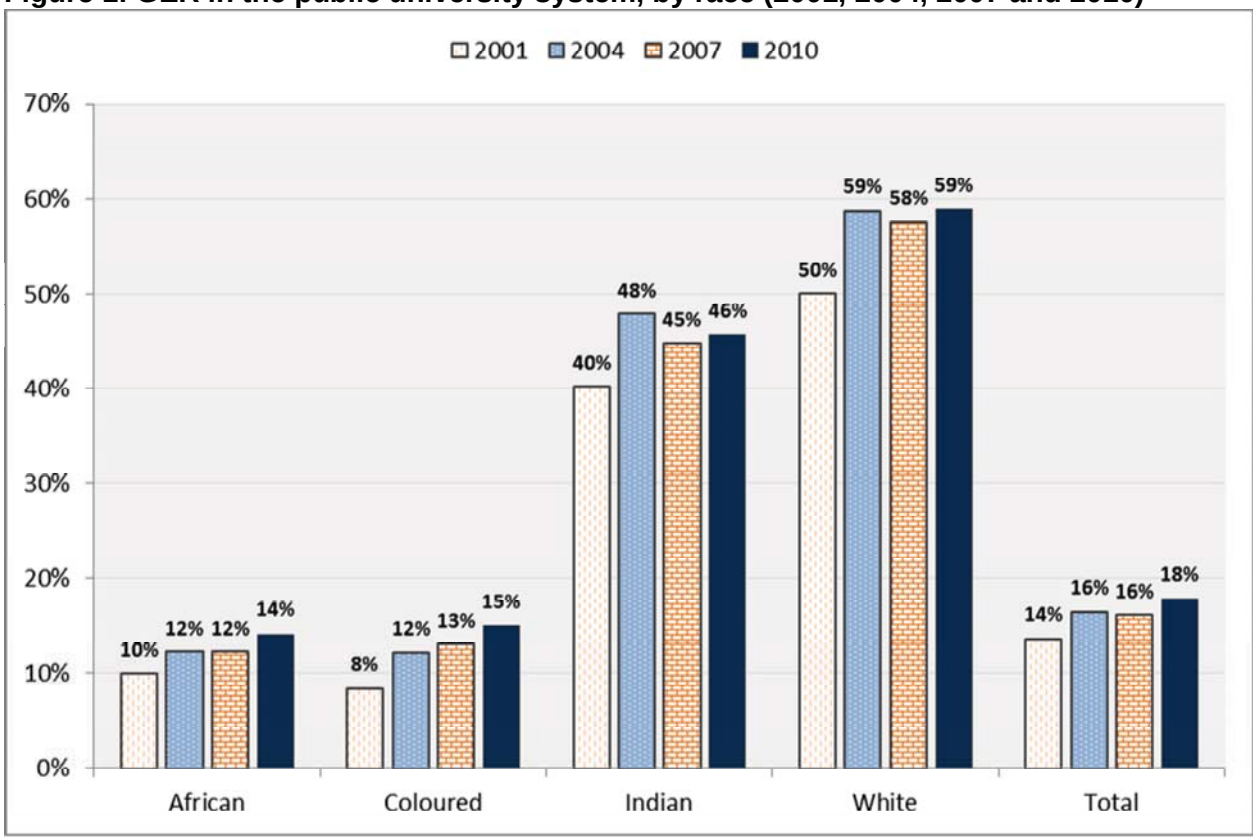
These differences can also partially be attributed to the differences in the growth rates of the racial groups in the age group 20–24 as well as the different growth rates of the university enrolments of the various race groups. The African population in this age group, for instance, grew by nearly 17% whereas the white population declined by 12.8% over the nine-year period. Enrolments by African students increased by nearly 68% and by white students by only 2.7% over the same period. Enrolments by students from the coloured population group in this age group also grew while those of the Indian population group declined (StatsSA 2011; DHET 2012e).

Table 8: Students at South African universities, by race (2004–10)

	Number of students		**Students (%)**		**Average annual growth rate (%)**
	2004	**2010**	**2004**	**2010**	**2004–10**
African	453 621	595 963	61.1	67.2	4.7
Coloured	46 091	58 219	6.2	6.6	4.0
Indian	54 326	54 537	7.3	6.1	0.1
White	188 714	178 346	25.4	20.1	-0.9
Total	**742 752**	**887 065**	**100.0**	**100.0**	**3.0**

Source: DHET (2012e)

Figure 1: GER in the public university system, by race (2001, 2004, 2007 and 2010)

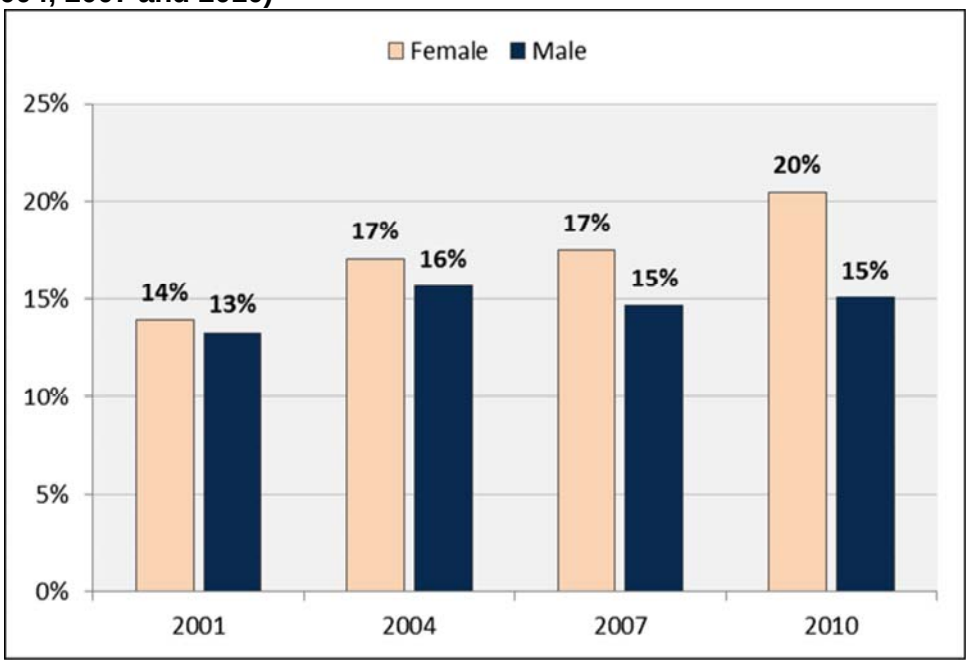


Source: StatsSA (2011); DHET (2012e)

Figure 2 (below) shows gross participation rates by gender. The participation rate of females increased from 14% in 2001, to 17% in 2004 and to 20% in 2010. The headcount enrolments of females increased from 403 619 in 2004 to 512 573 in 2010 – an increase of 108 954. Male enrolments increased from 340 870 in 2004 to 380 350 in 2010, which is an increase of only 39 480 (DHET 2012e). The participation rate of males has remained more or less the same, which is cause for concern.

South Africa has been classified as an upper-middle income country by the World Bank. Table 9 shows the GER of South Africa compared to other, similar upper-middle income countries of the world. The other upper-middle income countries have considerably higher levels of participation in higher education.

Figure 2: Gross participation rates in the public university system, by gender (2001, 2004, 2007 and 2010)



Source: StatsSA (2011); DHET (2012e)

Table 9: GER in higher education of a selected number of upper-middle income countries (2008)

Country	GER in higher education (%)
Argentina	68
Chile	55
Costa Rica	25
Lebanon	52
Malaysia	36
Mauritius	26
Panama	45
South Africa	**17**
Turkey	38
Uruguay	65

Source: World Bank (2011)

The overall GER in South Africa grew from 14% in 2001 to 18% in 2010. **Goal 1,** reaching a GER of 20% for public higher education by 2010, **was thus not attained, although progress was made**.

The racial composition of enrolments at universities has changed significantly over the decade 2000–10. As a percentage of total enrolments, African, coloured and Indian students grew from 70.4% in 2000 to nearly 80% in 2010. There are, however, large differences in the racial composition of the student population at the various universities, as a result of geographical location and historical legacies. Progress was made with regard to the changes in the **racial profile of the students (Goal 2) but there remains huge inequality with regard to participation rates**. However, it is evident that with regard to increased participation of females in higher education, **Goal 3 was attained**. The continuing low participation rate of males in higher education is cause for concern. Although female enrolments are more than male enrolments, females are underrepresented in masters and doctoral enrolments as well as among graduates. In 2010, the number of female graduates in masters programmes was 4 121 compared to 4 388 males. Only 591 females graduated in doctoral programmes in 2010, compared to 820 males (DHET 2012e).

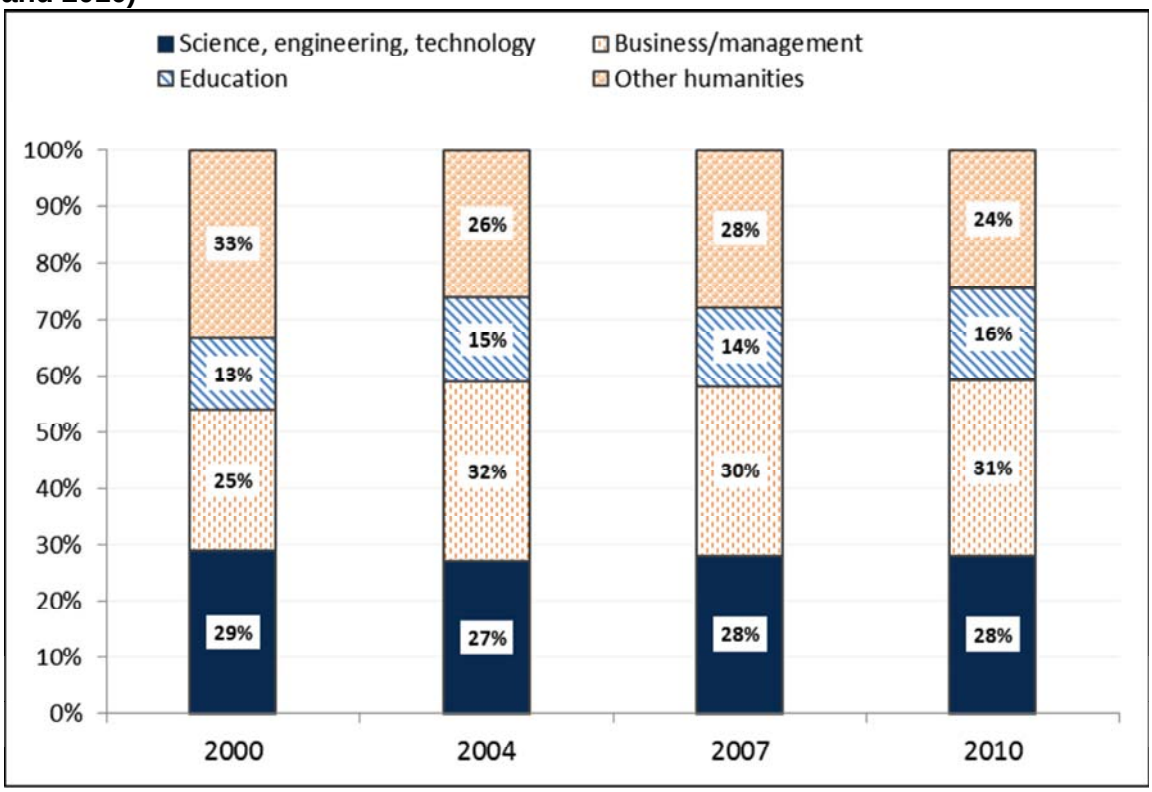
b) Goal 4: Student enrolments in major fields of study

Goal 4, which relates to increased enrolments in the science, engineering and technology (SET) fields and in business and management sciences (BUS), can be evaluated by looking at trends in enrolments by major field of study. These are fields that are considered to be key for economic development. SET enrolments include enrolments in: agriculture and food technology; architecture and the built environment; computer and information sciences; engineering; health sciences; life and physical sciences; and mathematical sciences. BUS enrolments include enrolments in accounting; auditing; banking; public finance; investments and securities; taxation; insurance; marketing; human resource management; and other management services. The *humanities and social sciences* include enrolments in: the performing, creative and visual arts; education; languages and literature; psychology; philosophy and theology; social services; sociology; political studies; history; and anthropology. Although *education* falls under the humanities and social sciences, enrolments in this field are shown separately because of the shortage of qualified teachers for the basic education system.

Figure 3 (below) shows that SET enrolments remained below the target of 30% for the period 2000–10. The **target for SET was thus not attained**. The **target for BUS was however reached (31%)**. The highest average annual growth rate was in education

(7.4%), followed by BUS (7.2%). SET headcount enrolments grew by 4.6% per year, which was lower than the average annual growth rate for the system (4.9%). Enrolments in other humanities and social sciences grew by only 1.7% on average per year. The huge increase in enrolments in education from 2000–04 can be partly attributed to the incorporation of the teacher training colleges into the universities in 2001.

Figure 3: Percentage headcount enrolments, by major field of study (2000, 2004, 2007 and 2010)



Source: DHET (2012e)

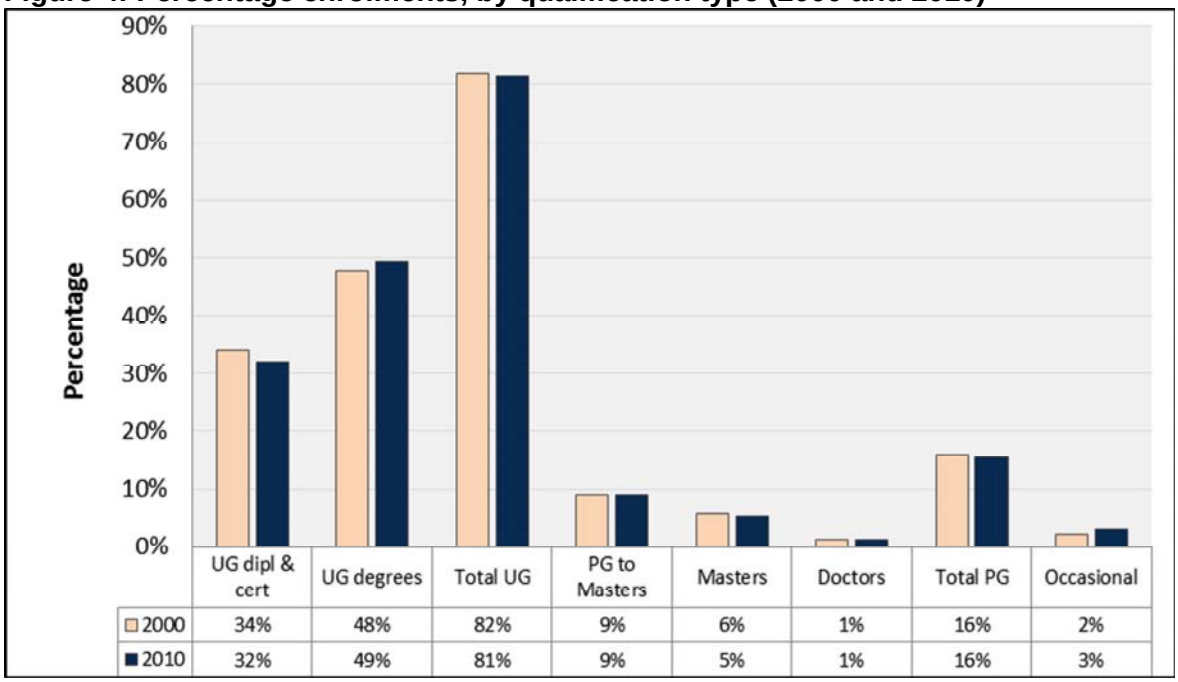
c) Goal 5: Student enrolments in masters and doctoral programmes

The increased production of high-level skills required for a knowledge economy should be reflected in higher growth rates in masters and doctoral enrolments. The target is to have reached at least 15% of enrolments in masters and doctoral programmes by now.

The data on enrolments by qualification type in Figures 4 and 5 (below) show that South Africa's higher education system is largely an undergraduate one. For the 10-year period 2000–10, the percentage distribution of enrolments according to qualification type remained largely unchanged. As captured in Figure 5, growth in enrolments at the masters level

(4.0%) was lower than the average annual growth rate at all levels (4.9%). Doctoral enrolments grew at a higher rate (6.1%), but because it was from a low base, no significant change occurred in the distribution by qualification type. Postgraduate enrolments grew at a lower rate (4.6%) than undergraduate enrolments (4.8%). It can be concluded that the system has made minimal progress towards attaining Goal 5, which is increasing enrolments of masters and doctoral students to at least 15% of total enrolments.

Figure 4: Percentage enrolments, by qualification type (2000 and 2010)



	UG dipl & cert	UG degrees	Total UG	PG to Masters	Masters	Doctors	Total PG	Occasional
2000	34%	48%	82%	9%	6%	1%	16%	2%
2010	32%	49%	81%	9%	5%	1%	16%	3%

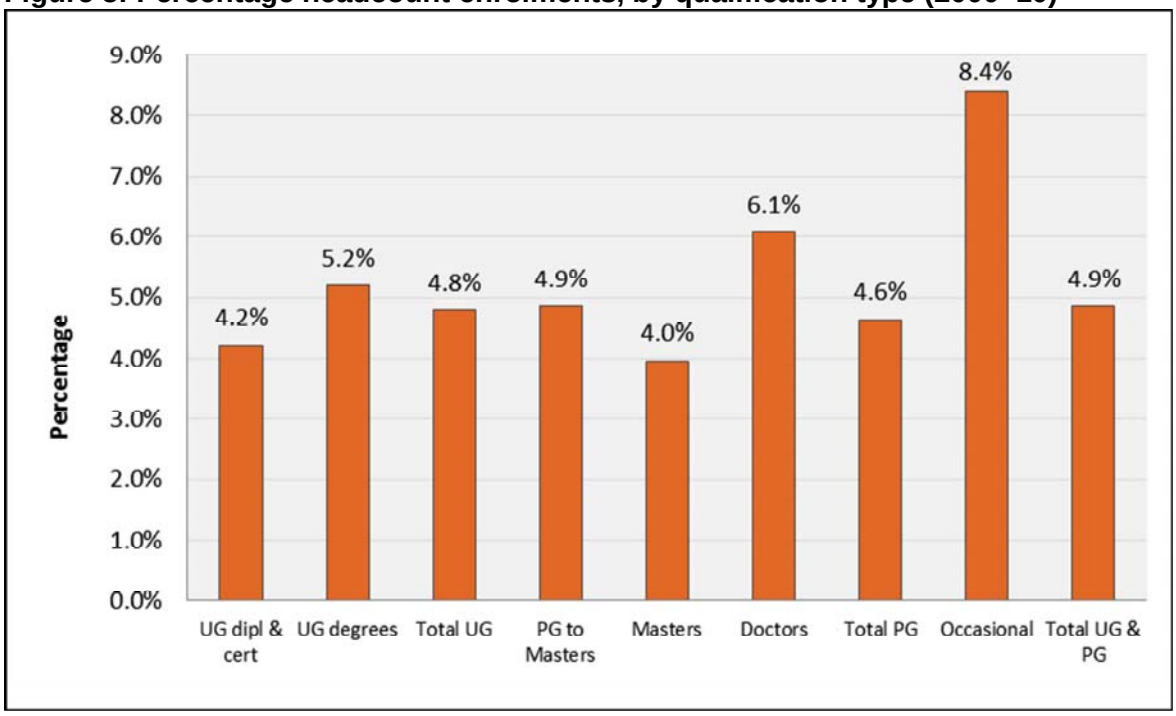
Source: DHET (2012e)

d) Goal 6: Academic staff qualifications

The goal of well-qualified academic staff is based on the important role academics play in delivering the public university system's teaching and research mandates. This is based on the acknowledgement that (a) academics with doctoral degrees are the major producers of research outputs and the main supervisors of doctoral students – a 2011 study by CHET found a 0.84 correlation between the percentage of staff with doctoral qualifications and research outputs (Badsha & Cloete 2011: 6); and (b) quality teaching at university level requires permanent academic staff to hold at least a masters degree. The targets for permanent academics' highest formal qualification are that at least 50% should have doctoral degrees and at least 90% should have either a doctoral degree or a masters

degree (FFC 2012: 49). The *National Development Plan 2030* (NPC 2012: 319) set the target for academic staff with doctoral qualifications at 75%.

Figure 5: Percentage headcount enrolments, by qualification type (2000–10)



Source: DHET (2012e)

Although the qualifications of permanent academic staff improved in the period 2000–10, with staff in possession of doctorates increasing from 32% in 2000 to 36% in 2010 (DHET 2012e), and those with master degrees from 29% to 35% (DHET 2012e), the 71% with either a masters or doctoral degree was still way below the 90% target.

e) Goal 7: Graduate outputs

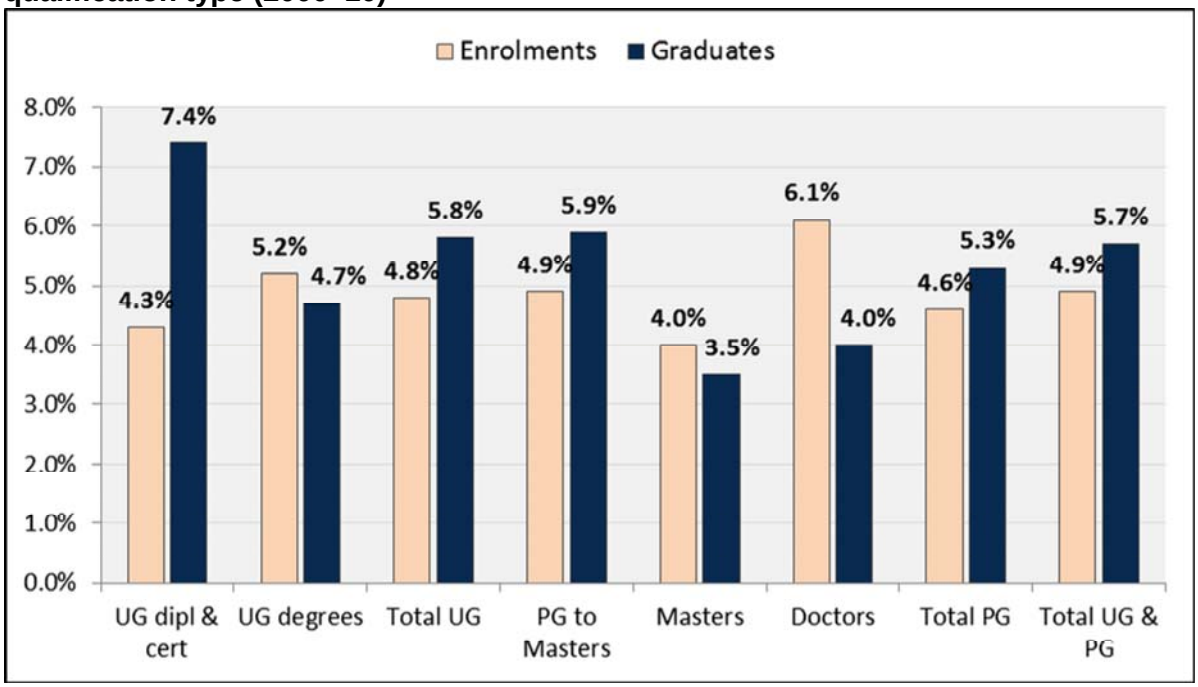
Goal 7 deals with the knowledge outputs of the public higher education system in terms of graduates. The goal requires that the graduate output improve and that the growth in graduates be higher than the growth in enrolments. This in effect means that the system will make progress in terms of getting more students who are currently clogging up the system to complete their studies; graduates should thus at least grow at a higher rate than enrolments for a period, to improve on historically low levels of graduate output. The goal requires that productivity of the system improve – in terms of the production of graduates and graduate output efficiency. The funding framework provides incentives for increased

graduate output through the teaching output grant, and has furthermore supported the improvement of graduate output through teaching development grants.

A comparison of total growth in graduates and the total growth in headcount enrolments shows (Table 11) that the graduate total increased from 88 273 in 2000 to 153 325 in 2010 (a total increase of 61%), while total headcount enrolments increased from 555 161 to 892 943 (a total increase of 74%) – see Table 10. Figure 6 (below) shows the average annual growth rates of enrolments and graduates for the period 2000–10 per qualification type. The total number of graduates grew at an average annual rate of 5.7%, compared to the average annual growth rate of 4.9% for headcount enrolments. This indicates that the **productivity component of Goal 7 was achieved** to some extent. Although the system has remained highly inefficient, there was an improvement in the rate of graduate production. This achievement has not been the case in all qualification types though. The much higher average annual growth rate in students that completed their qualifications for undergraduate diplomas and certificates (7.4%, compared to 4.3% in enrolments), is inflated by the large numbers of students that were enrolled for distance education in-service certificates (Advanced Certificate in Education programmes), completing their studies in a period of two years. Productivity of graduates in undergraduate degrees is cause for concern. The number of graduates in undergraduate degree programmes grew at a lower average annual rate of 4.7%, compared to the enrolments, which grew on average at 5.2% per year. The same holds for masters and doctoral degree programmes. The masters graduates grew at 3.5% on average per year, while the enrolments grew at an average annual rate of 4.0%. The PhD graduates grew at 4.0% on average per year, compared to enrolments growing by 6.1% on average per year.

Distance education students should be analysed separately from contact students because the expectation is that they would take more or less double the time taken by contact students to complete their qualifications. A cohort analysis tracks a group of first-time entering students to determine how many of them graduate (or drop out) after the required time to complete a qualification. Students that interrupt their studies for a period but return to graduate eventually are not counted as dropouts. Cohort analysis is one of the most accurate measures of system efficiency in terms of graduate outputs. Students drop out for a range of reasons, including financial factors, family responsibilities, and poor academic performance.

Figure 6: Average annual growth rates in headcount enrolments and graduates, by qualification type (2000–10)



Source: DHET (2012e)

Table 12 shows that of the 37 330 new entrants in three-year national diplomas in 2005, only 40% has graduated within six years. Similarly, of the 32 178 new entrants in three-year general or professional degrees in 2005, 52% has graduated within six years.

Table 13 shows that 49% of the 19 032 new entrants that entered four-year professional degrees in 2005 graduated within six years.

Table 14 shows that of the 13 399 new entrants in 2001 into master programmes, 50% had graduated by 2009, while 50% had dropped out or had not yet completed their studies over a period of nine years. By 2009, 38% of Africans students, 54% of coloured students, 53% of Indian students and 63% of white students had graduated. The percentages that have graduated for the other cohorts were smaller due to the fact that fewer years of study were analysed. By 2009, 43% of the 2002 cohort, 46% of the 2003 cohort and 44% of the 2004 cohort had graduated. The average expected time to graduation for a masters programme is three years and all of these cohorts had been analysed for a much longer period.

Table 10: Headcount enrolments, by qualification type (2000–10)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average annual increase (2000–10) (%)
Undergraduate diplomas and certificates	189 203	204 870	206 718	209 514	252 225	252 149	246 938	254 776	271 312	279 366	287 427	4.3
Undergraduate degrees	265 653	286 331	310 879	338 266	345 194	348 438	360 572	370 037	382 088	405 053	440 939	5.2
Total undergraduate	**454 856**	**491 201**	**517 597**	**547 780**	**597 419**	**600 587**	**607 510**	**624 813**	**653 400**	**684 419**	**728 366**	**4.8**
Postgraduate to masters level	49 971	53 506	58 081	61 815	69 320	61 436	58 510	59 185	66 915	74 495	80 321	4.9
Masters	31 666	34 865	39 189	43 431	45 327	44 315	42 899	41 164	41 711	43 723	46 699	4.0
Doctors	6 419	6 996	7 716	8 315	9 104	9 434	9 828	10 048	9 994	10 529	11 590	6.1
Total postgraduate	**88 056**	**95 367**	**104 986**	**113 561**	**123 751**	**115 185**	**111 237**	**110 397**	**118 620**	**128 747**	**138 610**	**4.6**
Occasional students	12 249	18 229	20 665	23 128	23 332	19 264	22 633	25 679	27 470	24 613	25 967	7.8
Total enrolment	**555 161**	**604 797**	**643 248**	**684 469**	**744 502**	**735 036**	**741 380**	**760 889**	**799 490**	**837 779**	**892 943**	**4.9**

Source: DHET (2012e)

Table 11: Graduates, by qualification type (2000–10)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average annual increase (2000–10) (%)
Undergraduate diplomas	25 398	29 498	32 439	35 192	37 844	39 222	42 441	43 416	46 090	51 580	51 884	7.4
Undergraduate degrees	38 865	36 012	36 873	40 061	45 780	48 427	51 267	52 292	54 595	57 189	61 299	4.7
Total undergraduate	**64 263**	**65 510**	**69 312**	**75 253**	**83 624**	**87 649**	**93 708**	**95 708**	**100 685**	**108 769**	**113 183**	**5.8**
Postgraduate to masters level	16 953	18 686	20 042	21 850	24 455	23 207	21 985	22 119	23 863	25 202	30 088	5.9
Masters	6 096	6 478	6 919	7 501	7 890	8 018	7 883	7 513	7 514	8 056	8 633	3.5
Doctors	961	897	969	1 045	1 104	1 189	1 100	1 274	1 182	1 380	1 421	4.0
Total postgraduate	**24 010**	**26 061**	**27 930**	**30 396**	**33 449**	**32 414**	**30 968**	**30 906**	**32 559**	**34 638**	**40 142**	**5.3**
Total graduates	**88 273**	**91 571**	**97 242**	**105 649**	**117 073**	**120 063**	**124 676**	**126 614**	**133 244**	**143 407**	**153 325**	**5.7**

Source: DHET (2012e)

Table 12: Throughput rates of the 2005 new entrants in three-year national diplomas and three-year general and professional degrees

Academic year	Number (non-accumulative)						Number (accumulative)			
	2005	2006	2007	2008	2009	2010*	Graduated or dropped out within three years	Graduated or dropped out within four years	Graduated or dropped out within five years	Graduated or dropped out within six years
Three-year national diplomas										
Headcounts (non-accumulative)							**Headcounts (accumulative)**			
Registered at beginning of year	37 330	25 092	21 179	12 150	6 158	2 949				
Graduated at end of year			6 153	4 574	2 746	1 326	6 153	10 727	13 473	14 799
Dropped out at end of year	12 238	3 913	2 876	1 418	463	1 623	19 027	20 445	20 908	22 531
Percentage (non-accumulative)							**Percentage (accumulative)**			
Registered at beginning of year	100%	67%	57%	33%	16%	8%				
Graduated at end of year			16%	12%	7%	4%	16%	29%	36%	**40%**
Dropped out at end of year	33%	10%	8%	4%	1%	4%	51%	55%	56%	**60%**
Three-year general and professional degrees										
Headcounts (non-accumulative)							**Headcounts (accumulative)**			
Registered at beginning of year	32 178	22 517	20 195	9 874	4 073	1 695				
Graduated at end of year			8 773	4 921	2 064	820	8 773	13 694	15 758	16 578
Dropped out at end of year	9 661	2 322	1 548	880	314	875	13 531	14 411	14 725	15 600
Percentage (non-accumulative)							**Percentage (accumulative)**			
Registered at beginning of year	100%	70%	63%	31%	13%	5%				
Graduated at end of year			27%	15%	6%	3%	27%	43%	49%	**52%**
Dropped out at end of year	30%	7%	5%	3%	1%	3%	42%	45%	46%	**48%**

Source: DHET (2012e); HEMIS: CHE & DHET cohort analyses

Notes: UNISA is excluded from this table. * The number of dropouts reflected in 2010 includes a number of students that would have returned in 2011. The dropout figure for 2010 is thus slightly inflated.

Table 13: Throughput rates of the 2005 new entrants in four-year professional degrees

Academic year	2005	2006	2007	2008	2009	2010*	Graduated or dropped out within four years	Graduated or dropped out within five years	Graduated or dropped out within six years
Four-year professional degrees									
Headcounts (non-accumulative)							**Headcounts (accumulative)**		
Registered at beginning of year	19 032	13 614	11 849	10 820	4 264	1 717			
Graduated at end of year				6 081	2 271	900	6 081	8 352	9 252
Dropped out at end of year	5 418	1 765	1 029	475	276	817	8 687	8 963	9 780
Percentage (non-accumulative)							**Percentage (accumulative)**		
Registered at beginning of year	100%	72%	62%	57%	22%	9%			
Graduated at end of year				32%	12%	5%	32%	44%	**49%**
Dropped out at end of year	28%	9%	5%	2%	1%	4%	46%	47%	**51%**

Source: DHET (2012e); HEMIS: CHE & DHET cohort analyses

Notes: UNISA is excluded from this table. * The number of dropouts reflected in 2010 includes a number of students that would have returned in 2011. The dropout figure for 2010 is thus slightly inflated.

Table 14: Throughput and dropout rates of master degree students for the 2001, 2002, 2003 and 2004 new entering cohorts, by race (all universities)

Race		Total graduates and dropouts/incomplete for 2001 cohort at end of 2009		Total graduates and dropouts/incomplete for 2002 cohort at end of 2009		Total graduates and dropouts/ incomplete for 2003 cohort at end of 2009		Total graduates and dropouts/ incomplete for 2004 cohort at end of 2009	
African	Registered	5 942		7 299		8 994		9 156	
	Graduated	2 238	38%	2 674	37%	2 908	32%	2 886	32%
	Dropped out	3 704	62%	4 625	63%	6 086	68%	6 270	68%
Coloured	Registered	712		873		994		954	
	Graduated	383	54%	731	84%	485	49%	413	43%
	Dropped out	329	46%	142	16%	509	51%	541	57%
Indian	Registered	1 308		1 326		1 497		1 462	
	Graduated	698	53%	731	55%	801	54%	683	47%
	Dropped out	610	47%	595	45%	696	46%	779	53%
White	Registered	5 393		6 094		6 709		6 314	
	Graduated	3 403	63%	2 532	42%	4 237	63%	3 859	61%
	Dropped out	1 990	37%	3 562	58%	2 472	37%	2 455	39%
Total	Registered	13 355		15 592		18 194		17 886	
	Graduated	6 722	**50%**	6 668	**43%**	8 431	**46%**	7 841	**44%**
	Dropped out	6 633	**50%**	8 924	**57%**	9 763	**54%**	10 045	**56%**

Source: DHET (2012e); HEMIS: Masters cohort study

Table 15: Throughput and dropout rates of doctoral degree students for the 2001, 2002, 2003, 2004 and 2005 new entering cohorts (all universities)

Race		Total graduates and dropouts/ incomplete for 2001 cohort at end of 2009		Total graduates and dropouts/ incomplete for 2002 cohort at end of 2009		Total graduates and dropouts/ incomplete for 2003 cohort at end of 2009		Total graduates and dropouts/ incomplete for 2004 cohort at end of 2009		Total graduates and dropouts/ incomplete for 2005 cohort at end of 2009	
African	Registered	567		749		801		900		910	
	Graduated	263	46%	308	41%	327	41%	315	35%	256	28%
	Dropped out	304	54%	441	59%	474	59%	585	65%	654	72%
Coloured	Registered	84		101		89		151		120	
	Graduated	43	51%	96	95%	46	52%	56	37%	38	32%
	Dropped out	41	49%	5	5%	43	48%	95	63%	82	68%
Indian	Registered	165		194		196		212		194	
	Graduated	91	55%	96	49%	83	42%	75	35%	64	33%
	Dropped out	74	45%	98	51%	113	58%	137	65%	130	67%
White	Registered	910		1 041		1 089		1 085		916	
	Graduated	528	58%	449	43%	519	48%	495	46%	381	42%
	Dropped out	382	42%	592	57%	570	52%	590	54%	535	58%
Total	Registered	1 726		2 085		2 175		2 348		2 140	
	Graduated	925	**54%**	949	**46%**	975	**45%**	941	**40%**	739	**35%**
	Dropped out	801	**46%**	1 136	**54%**	1 200	**55%**	1 407	**60%**	1 401	**65%**

Source: DHET (2012e); HEMIS: PhD cohort study

Table 15 shows the results of a study into the throughput rates of the 2001, 2002, 2003, 2004 and 2005 doctoral cohorts. The expected average time to graduation for a doctoral student is five years. By 2009, 54% of the 2001 cohort had graduated, while 46% had dropped out or were still studying. Similarly by 2009, 46% of the 2002, 45% of the 2003, 40% of the 2004, and 35% of the 2005 cohort had graduated. It is apparent that the inefficiencies in producing graduates are just as extensive at postgraduate level.

Thus, the cohort output target of 65% for **Goal 7 – the efficiency target – was not achieved**. The system clearly shows high levels of inefficiency. The completion rate of

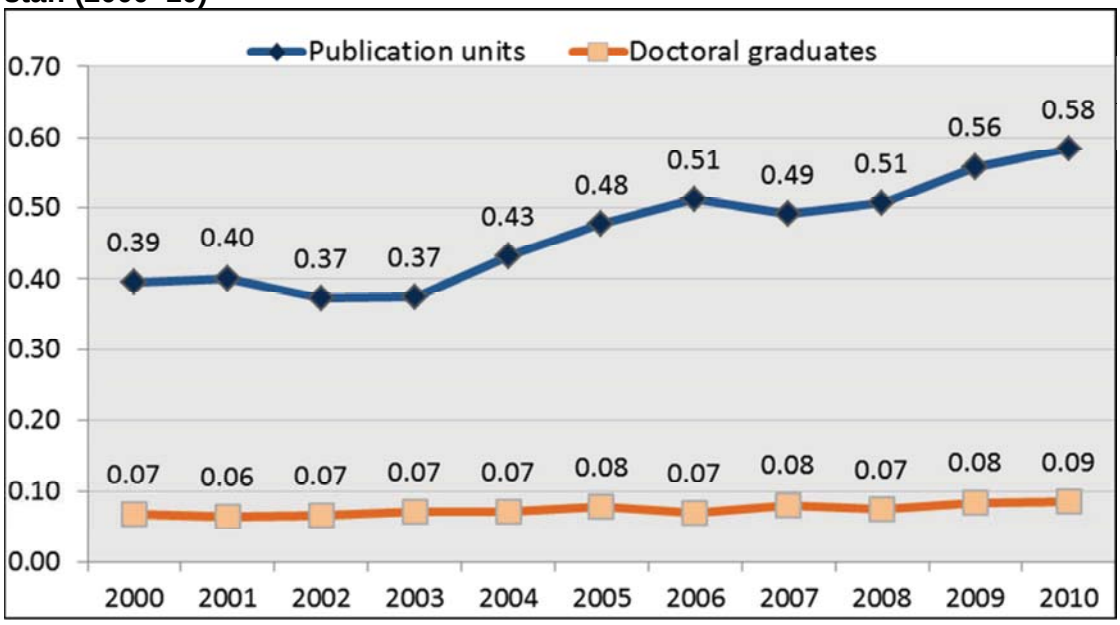
cohorts of masters and doctoral students remained below 50% throughout the period, again an indication of inefficiencies in the system with regard to graduate output.

f) Goal 8: High-level knowledge outputs

High-level knowledge outputs in the form of the production of research publications and doctoral graduates are critical if South Africa is to participate fully in the global knowledge economy. Research publications consist mainly of articles that appear in accredited journals, which have editorial boards of experts in a field and employ peer review procedures (FFC 2012). The efficiency targets for Goal 8 in Table 7 are one research publication per permanent academic per year, and 0.15 doctoral graduates per permanent academic per year on average for the system.

A recent study by Mouton (2012a) indicates that there is persuasive evidence of a very strong correlation between the proportion of staff with doctorates and per capita research output. This correlation suggests that the production of increased numbers of doctoral graduates is a prerequisite for increasing research outputs. For the university sector this implies the improvement of the qualification profile of institutions' permanent academic staff to higher percentages of academic staff with doctorates.

Figure 7: Ratios of publication units and doctoral graduates to permanent academic staff (2000–10)



Source: DHET (2012e)

In the period 2000–10, the productivity of the public university system with regard to research outputs productivity (i.e an increase in research publication units) improved considerably. The total of research publications (research articles, published research conference proceedings and research books) increased from 5 602 in 2000 to 9 748 in 2010, an average annual increase of 5.2% (DHET 2012e). Mouton (2012a) makes the same observation, noting that university research production – since the introduction of a national research subsidy scheme in 1987 – initially remained quite stable (ranging between 5 000 and 5 500 article units between 1988 and 2003), but then increased dramatically to reach more than 8 000 units in 2010. He further states that the best explanation for this dramatic increase is the introduction of the new research funding framework in 2003 (and which came into effect in 2004/05), which provided much more significant financial reward for research units and clearly provided a huge incentive to institutions to increase their outputs.

Compared to the production of publication units, the doctoral graduate total grew at a lower average annual rate of 4.0%, rising from a total of 961 in 2000 to 1 421 in 2010. The publication ratio did improve, from 0.38 in 2000 to 0.58 per permanent academic in 2010, but remained below the target of 1.0 for the system (see Figure 7, above). The average doctoral output ratio per permanent academic staff member increased slightly, from 0.07 to 0.09 during the period 2000–10, but remained well below the target of 0.15 (see Figure 7, above). The lack of improvement in doctoral graduates is illustrated in Table 15 (above) and Figure 8 (below), which show that the growth in enrolments was not matched by a similar growth in graduates. There is a widening gap between doctoral enrolments and graduates.

Although there was marked improvement in the productivity of research publications, there was very little improvement in productivity with regard to doctoral graduates. The improved productivity both with regard to research publications and doctoral graduates **did not achieve the targets set by Goal 8.**

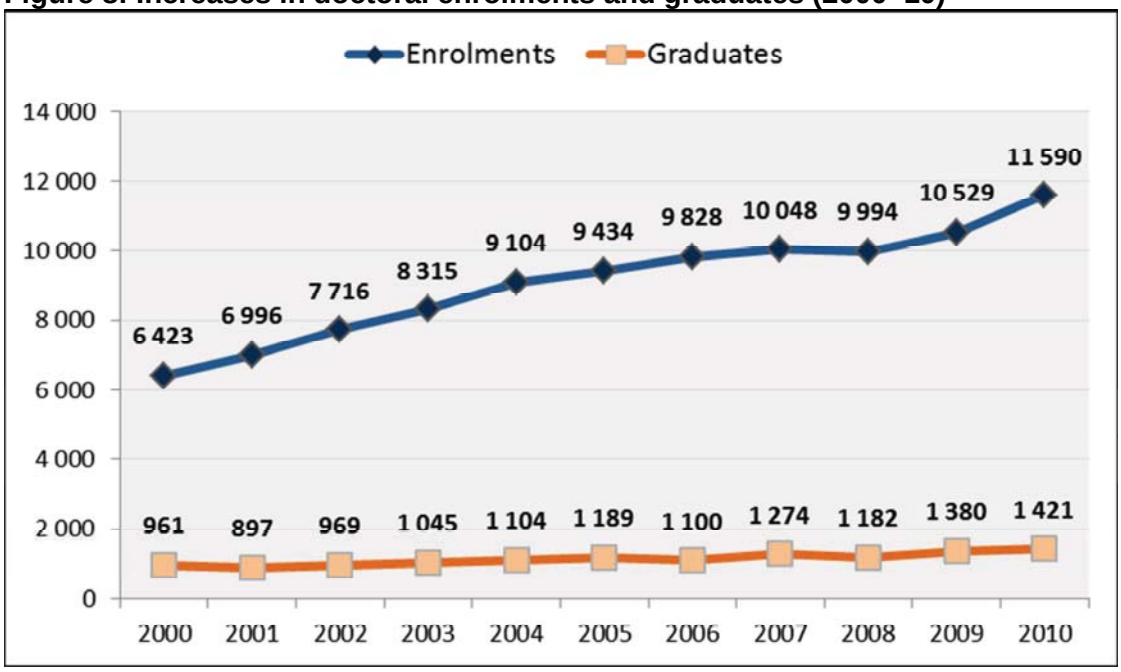
4.4 Conclusion

The current funding framework was developed as an instrument to serve the transformational goals for higher education envisaged in Education White Paper 3 (DoE 1997) and the NPHE (MoE 2001). The extent to which we can ascribe the changes

described, and ascribe the degree to which targets have been achieved or not achieved, to the funding framework is contestable, considering the numerous factors involved in realising these targets. An analysis of performance indicators related to these goals as well as targets set show that for the period 2000–10:

a) Gross participation rates in the public university system improved from 14% in 2000, to 16% in 2005, and to 18% in 2010. This reflects a considerable improvement, but the target of 20% was not reached in public university education.

Figure 8: Increases in doctoral enrolments and graduates (2000–10)



Source: DHET (2012e)

b) The GER for all race groups improved in the period 2000–10, but the participation of the various race groups remains diverse. By the end of the period, the GER for Africans was 14%, followed by coloureds with a GER of 15%. The GER of Indians was 46%, while whites had a GER of 59%.

c) The target for increased female participation was reached, with an increase in GER from 14% to 20%. The GER of males increased from 13% to only 15%.

d) Student enrolments in the major fields of study – and especially in SET – did not reach the target of 30%, while BUS enrolments surpassed the target of 30%. It needs to be noted that the proportions will shift if SET enrolment growth rates increase.

e) Masters and doctoral enrolments remained at levels much lower than the 15% target during the period 2000–10. By 2010, masters and doctoral enrolments constituted only

6% of total enrolments. The percentage of staff with doctoral qualifications would have to increase considerably if the system were to achieve the goal of producing more masters and doctoral graduates, since the growth of enrolments in masters and doctoral programmes is dependent on having staff with doctoral qualifications. Bursaries and grants will have to be increased to stimulate the enrolments and graduation of students in masters and doctoral programmes. Since honours programmes are the feeder programmes for masters programmes, bursaries for honours students will also have to be increased to improve the output of masters and doctoral graduates.

f) The highest qualifications of academic staff with a masters or doctoral degree improved over the period, increasing from 61% to 71%. This however still fell short of the target of 90%.

g) The graduate output of the system improved, with graduates growing at an average annual rate of 5.7% compared to 4.9% in headcount enrolments. There was thus an improvement, but there are various concerns raised with regard to the decline in productivity in undergraduate degrees, as well as in masters and doctoral degrees. Dropout rates at both undergraduate and postgraduate levels remained very high, with approximately 50% of students not completing their qualifications.

h) High-level knowledge outputs improved for research publications, but remained more or less stagnant with regard to the production of doctoral graduates. The latter is cause for concern, since these graduates are needed to boost research outputs and to form the basis of the future academics and researchers in support of a knowledge economy. It can nevertheless be concluded that the fact that the funding framework has incentives for research outputs definitely contributed to an increase in the research outputs of the universities, especially with regard to research publications.

In summary: The current funding framework did contribute to improvements with regard to the transformational goals, taking into account that although it was introduced in 2003 and came into effect in 2004/05, it was only fully functional for the period 2007/8–2011/12 as a result of a period of migration. This is a relatively short implementation period for giving effect to all the transformational goals set. Despite the improvements detailed, the system remained a very inefficient one, performing way below most of the targets set. The Financial and Fiscal Commission indicates that a revised funding framework must include incentivising public universities to improve their individual performances, which would improve the overall performance of the system (FFC 2012).

5. Higher education funding approaches and the current funding framework implemented in South Africa

5.1 Introduction

Salmi & Hauptman (2006) report that in recent years there has been a shift in the manner in which public resources are allocated to higher education institutions. The move has been away from more traditional negotiations of budgets, ad hoc budgets and categorical/earmarked funds, towards increasingly sophisticated funding formulas that aim to insulate allocation decisions from excessive political pressures and rather encourage positive institutional behaviour. Overall, the international trend is that government allocations to the higher education sector contain three elements, namely the following:

a) A block grant based on a formula, which is not earmarked and is utilised for instruction, research and other operational expenses.
b) Allocations to contribute to a national loan/grant scheme for financial assistance to students.
c) Ad hoc earmarked (competitive) allocations, which are mainly used for infrastructure development and specific research projects of national importance.

5.2 International higher education funding approaches

Governments use different approaches to allocate funding to higher education institutions and programmes. The different funding approaches include:

a) Incremental funding;
b) Formula-based funding; and
c) Performance-based funding.

i. Incremental funding

The incremental funding approach, also known as line-item budgeting, is the oldest and among the most commonly used higher education funding approaches. This funding approach mainly entails making incremental or subtractive adjustments to the previous year's allocations. These adjustments may apply to all line items or specific line items

(Hummel 2012). Although this approach is easy to understand and operationalise, it has several disadvantages. As pointed out by Wangenge-Ouma (2011),

> although universities submit budgets to government, allocations are hardly informed by the submitted budgets. Individual allocations are generally based on those of the previous year and do not consider the cost of higher education provision. Allocations are generally arrived at arbitrarily.

Other than the under-funding that generally results from this funding approach, the approach also does not incentivise performance. Countries that utilise this higher education funding approach include Egypt, Nigeria and Kenya.

ii. Formula-based funding

Formula-based funding, as the name suggests, is a funding approach that relies on formulas to distribute appropriations to individual higher education institutions. Funding formulas are usually based on a number of factors, such as historical data, enrolment and graduation data, anticipated trends, research outputs, and negotiated political agreements, among other factors. Funding formulas, as noted by Hummel (2012), are often seen as objective and a way of equitably allocating resources. Funding formulas also guard against political competition and lobbying, which is normally the case in the incremental funding approach. Other advantages of formula-based funding include the following:

- Funding based on a subsidy formula gives greater recognition to the autonomy of an institution, since the state usually (except perhaps in the case of limited earmarked amounts) does not prescribe how the allocated amount has to be spent.
- A subsidy formula ensures that the rules of the funding framework are known in advance and therefore promotes efficient medium- and even long-term planning by an institution.
- Subsidy formulas are designed to be flexible, in order to accommodate as many fluctuating factors (input or performance parameters) as possible.

Like all other higher education funding approaches, the formula-based funding model has weaknesses. For instance, since formulas are based on data, they are only as accurate as the data on which they are based. Another disadvantage of a formula-based funding mechanism is that its effectiveness will inevitably become eroded over time, as institutions may exploit aspects of the formula for purposes other than those intended. For example,

loopholes are bound to be discovered in the composition of the formula or in the definition or calculation of the input parameters. It is therefore crucial for the state, and in the interests of cross-institutional equity, to deem any funding formula as dynamic. While it would be counter-productive to revise a funding formula annually, it should at least be scrutinised carefully every five years with a view to a possible revision.

Examples of countries that use formula-based funding of their higher education systems include South Africa, Finland, and several states in the United States of America.

iii. Performance-based funding

Performance-based funding, as the name suggests, is a funding approach that emphasises the performance of higher education institutions. In this funding approach, institutions are funded more for their outputs – for what they do. The primary objectives of performance-based funding are improved efficiency, accountability and quality. It should be mentioned that performance-based funding does not mean that input and cost-related factors are less important. There is no country that has a 100% performance-based funding system.

Three types of performance-based funding have been identified. These are: performance-based contracts/service-level agreements (found in some European countries, Canada and some states in the USA), performance indicators/measures (found in the USA and South Africa) and competitive funds (found in South America and some countries in Africa) (Salmi & Hauptmann 2006: 16).

Overall, there is a tendency to apply the funding approaches discussed above *in combination*. For instance, Denmark, Finland and France allocate funding on the basis of formulas and negotiations. In Norway, about 60% of allocations to universities are in the form of a lump sum basic grant and the rest on the basis of teaching and research-related performance. Earmarked funding is also used in various higher education systems to steer the system to achieve national goals and imperatives and to improve the performance of institutions.

5.3 The South African higher education funding framework

As is well known, at the onset of democracy in 1994 the country's higher education system was characterised by several deficiencies, identified in the report of the National Commission on Higher Education (NCHE 1996: 1–2) as including the following:

a) Perpetuation of an inequitable distribution of access and opportunity for students and staff along axes of race, gender, class and geographic origin. There were gross discrepancies in the participation rates by students from different population groups.

b) A chronic mismatch between higher education's output and the needs of a modernising economy, and discriminatory practices that limited the access of black and women students into fields such as science, engineering, technology and commerce.

The above deficiencies, and others, had to be the subject of transformation through various mechanisms. Regarding funding, both the Education White Paper 3 (DoE 1997) and the NPHE (MoE 2001) emphasised the need for a new higher education funding framework that could serve as an effective steering mechanism for the attainment of transformational goals. The current funding framework was subsequently introduced in 2003 and came into effect in 2004/05.

i. Assumptions and principles of the SAPSE funding framework and the current funding framework

The assumptions and principles of the South African Post-secondary Education funding framework (SAPSE), implemented from 1983–2003, and the current funding framework differ radically (FFC 2012).

The SAPSE funding framework had three key features:

a) Students were considered to be agents who were able to respond rationally to the demands of the labour market in their choice of institutions, qualifications and major fields of study. Under this approach, the public university system became no more than a set of choices made by individual students. As a consequence, the role of government in the national system was to fund student demand and to correct any market failures that may occur.

b) Government funding of higher education was assumed to be based on: (i) determinations of the actual costs of reasonably efficient institutions, and (ii) decisions about which costs should be covered by government subsidies.
c) Government and students and their families should share the costs of higher education, because it generates public and private benefits.

Education White Paper 3 (DoE 1997) and the NPHE (MoE 2001) rejected the first two central features of the SAPSE funding framework, but accepted the cost-sharing principle (FFC 2012). Both the 1997 White Paper and the 2001 National Plan asserted that (a) the government's key responsibility to higher education was not to contribute to institutional costs, and (b) the choices of students could not be the sole determinants of the enrolment size and shape of the higher education system. The model of higher education being the sum of student choices was rejected, as it had not worked in South Africa and would prevent the transformation of higher education (FFC 2012). Thus, Education White Paper 3 and the NPHE concluded that the role of government in funding higher education could not simply be to meet a total cost generated by the enrolment practices of individual institutions and student choices. The White Paper emphasises that government should take account of labour market signals and the development needs of the country and could not adopt the 'hands-off' approach embedded in the SAPSE framework. The National Plan, furthermore, indicates that the "planning process in conjunction with funding and an appropriate regulatory framework will be the main levers" for achieving the goals and targets set. The NPHE goes on to state that the "effective use of funding as a steering lever requires the development of a new funding formula based on the funding principles and framework outlined in the White Paper (MoE 2001: 12).

Therefore, the current funding framework, which was introduced in 2003 and came into effect in 2004/05, was a response to the limitations of the SAPSE funding framework, especially the two features of the framework that government rejected. The key features of the current funding framework are as follows:

a) *Affordability*: Government first decides how much it can afford to spend on higher education and then allocates funds to institutions, according to national needs and priorities.
b) *Distributive mechanism*: The funding framework becomes a distributive mechanism to allocate government funds to individual institutions, in accordance with the budget

made available by government, government's policy priorities and approved national higher education plans.

c) *Cost sharing*: The principle of cost sharing of higher education by government, students and families has been retained in the current funding framework.

The current funding framework therefore links the awarding of government higher education grants to national and institutional planning. This funding–planning link makes the current framework essentially a goal-oriented mechanism for the distribution of government grants to individual institutions, in accordance with (a) national planning and policy priorities, (b) the quantum of funds made available in the national higher education budget, and (c) the approved plans of individual institutions (MoE 2004).

ii. Steering mechanisms

Government steers the higher education system mainly through three instruments, as follows:

a) The *funding framework*, which will provide financial incentives to achieve the goals set for higher education. Accordingly, the current funding framework, which was introduced in 2003 and came into effect in the financial year 2004/05, has been designed to give the Minister the ability to reprioritise funding allocations in line with priority areas and policy incentives.

b) *Quality assurance* and the *programme approval process*. The programme approval process gives the Minister the leverage to phase out inefficient and expensive duplications, improve the quality of programme offerings, align programme offerings with institutional capacity and ensure that programme offerings are aligned to economic needs. The Minister has to approve the PQM of each university for subsidy purposes, while the CHE has to accredit programmes to ensure that both the programme content and the university resources will ensure a quality programme offering. Quality assurance is the function of the HEQC, a permanent committee of the CHE.

c) The *enrolment planning process (linked to the funding framework)*, which needs to ensure that student enrolment growth in the system is aligned with broader social and economic needs, the capacity of the system in terms of human and capital resources, and the fiscal resources available. It is thus acknowledged that the enrolment process cannot be left to institutional and student choice alone but has to be *steered* in order to achieve the desired outcomes.

iii. The planning process and government funding allocation to universities

a) Introduction

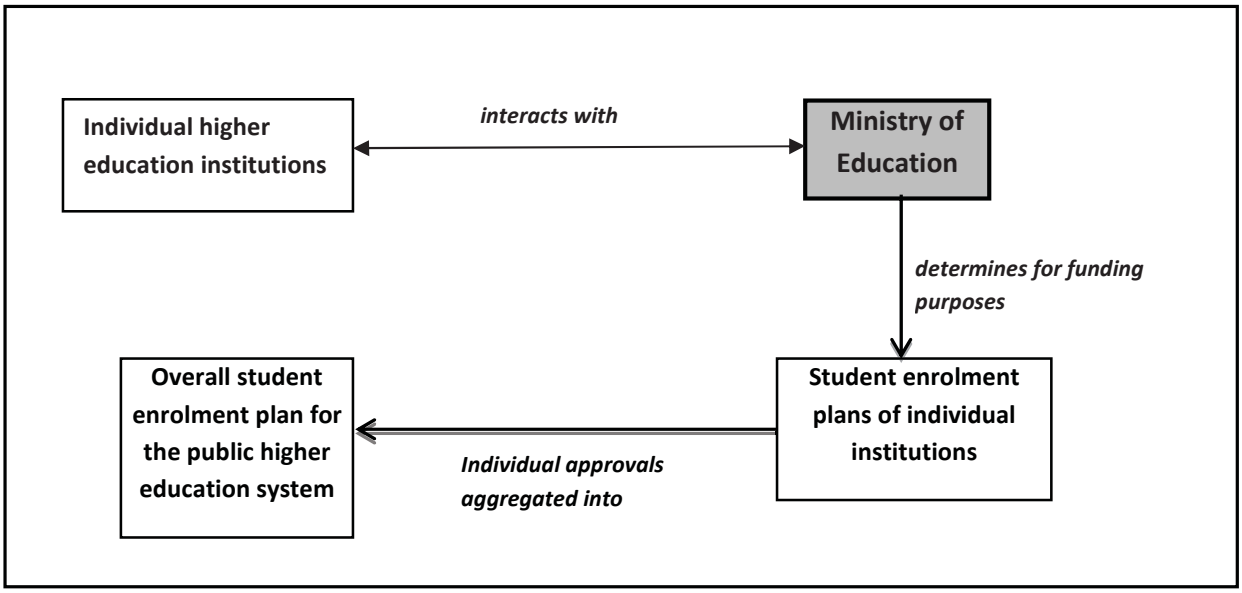
This section explains how the Ministry of Education distributes government grants to public universities in terms of the current funding framework and how it is linked to the planning process. This framework was approved in the government gazette (Vol. 462, No. 25824) of 9 December 2003 (MoE 2003), and has been used for allocating grants since the 2004/05 funding year.

A detailed description of the way government allocates funding to public universities can be found in the document *A New Funding Framework: How government grants are allocated to public higher education institutions*, published by the Ministry of Education in February 2004 (MoE 2004).

b) Overview of the funding framework

A basic feature of the new framework, which came into effect in 2004/05, is that it links the awarding of government higher education grants to national and institutional planning. This funding–planning link makes the new framework essentially a goal-oriented mechanism for the distribution of government grants to individual institutions, in accordance with (a) national planning and policy priorities, (b) the quantum of funds made available in the national higher education budget, and (c) the approved plans of individual institutions. This section of the report offers brief overviews of the planning/funding processes that have been built into the new framework. Diagram 4 (below) shows how the planning process is linked to the funding framework.

Diagram 4: Planning aspects of the new funding framework



The main features of the planning process are as follows:

i. The Ministry begins the process by analysing each institution's actual student enrolment data across a time period in terms of size and shape. It also analyses each institution's student output performance, the university's research output performance, and the staffing resources in the context of approved national benchmarks.

ii. The Minister determines areas identified through human resource development priority areas, in which increased enrolments are needed. These increased enrolments and graduates are needed to give effect to the Minister's PME targets.

iii. Universities are then requested to submit their institutional enrolment and output targets in view of national priority areas and taking cognisance of institutional capacity. After the Ministry has analysed these submitted plans a further exercise of adjusting institutional plans and targets is done through a negotiated process between the Ministry and the universities.

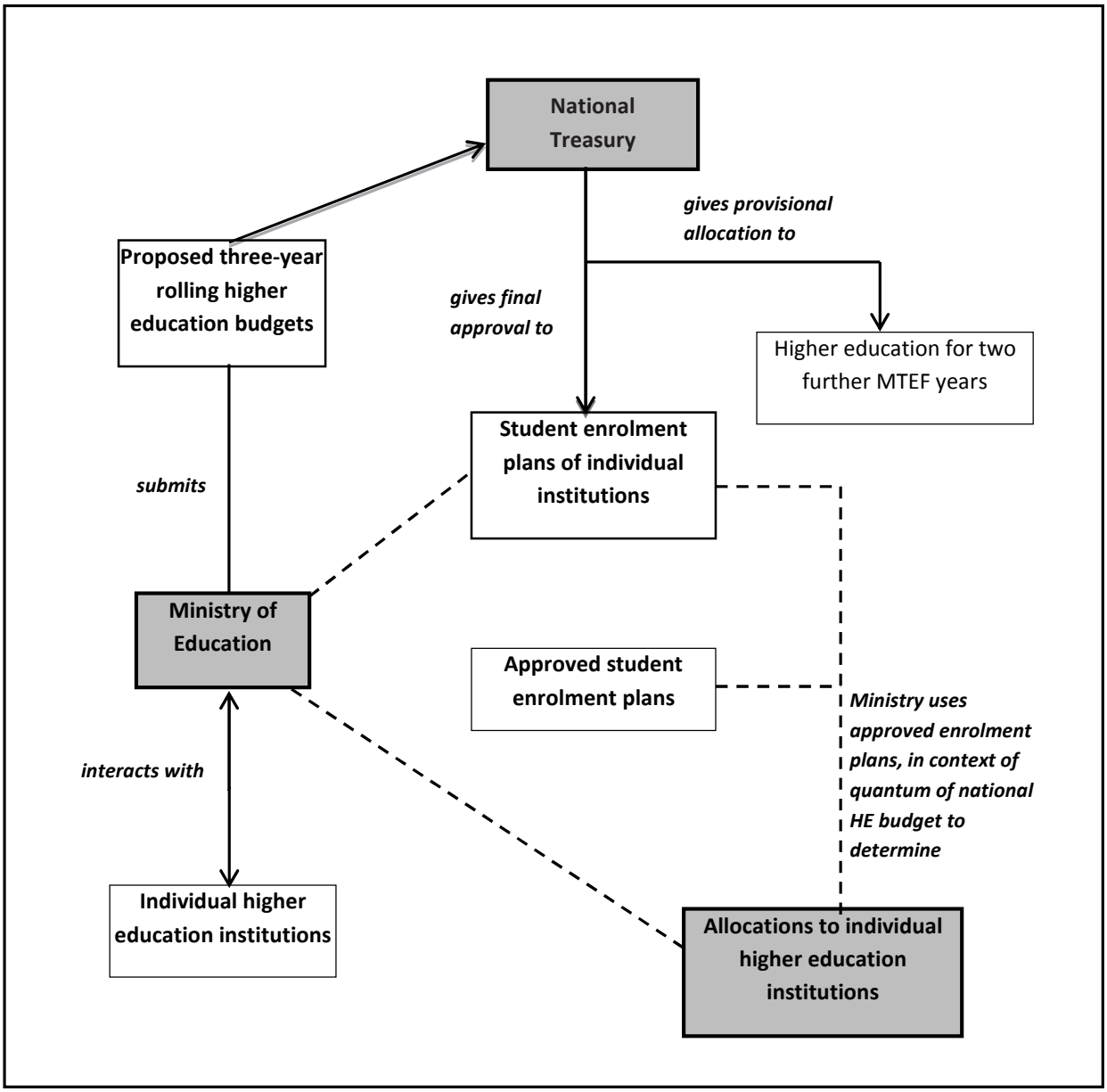
iv. At the end of this iterative process, the Ministry sets rolling student enrolment planning and rolling totals of funded FTE student places for each institution for a specified planning period. The individually approved institutional plans are consolidated by the Ministry into system-wide totals of FTE student places to be funded by government during this planning period. Targets in terms of student outputs, research outputs and staffing are also set for the planning period, which is normally for three years, in line with the three-year MTEF planning and budgeting cycle.

Diagram 5 shows how the planning processes outlined in Diagram 4 (above) become integral parts of the current framework's government funding processes. The key steps in the integrated planning and funding processes are as follows:

i. The Ministry of Education, on the basis of its readings of the national higher education environment and its interactions with institutional planning processes, submits MTEF budget proposals, as well as proposals for the final budget for the next year, to the National Treasury.

ii. The National Treasury approves provisional three-year rolling budgets for the higher education system. It also finalises the higher education budget for the next financial year.

Diagram 5: Integration of planning and funding in the new framework



iii. The Minister of Education approves the allocation of grants to institutions for a specific funding year, taking into account (a) the total amounts allocated to higher education by the National Treasury, and (b) the enrolment plans approved for each institution.

c) Division of the government budget for universities into categories and subcategories of grants

The Minister of Education divides, on a three-year rolling basis, the higher education budget into its various components. Diagram 6 (below) shows what has been approved in terms of the division of the university budget for the 2012/13 budget year. The purpose of the various components of the funding framework is as follows:

i. *Teaching input funding*, which funds universities for delivering teaching services and the supervision of postgraduate masters and doctoral students. The teaching input grant uses a funding grid for the distribution of grants to universities. The funding grid is based on the relative cost of offering teaching and research supervision in various fields of study.

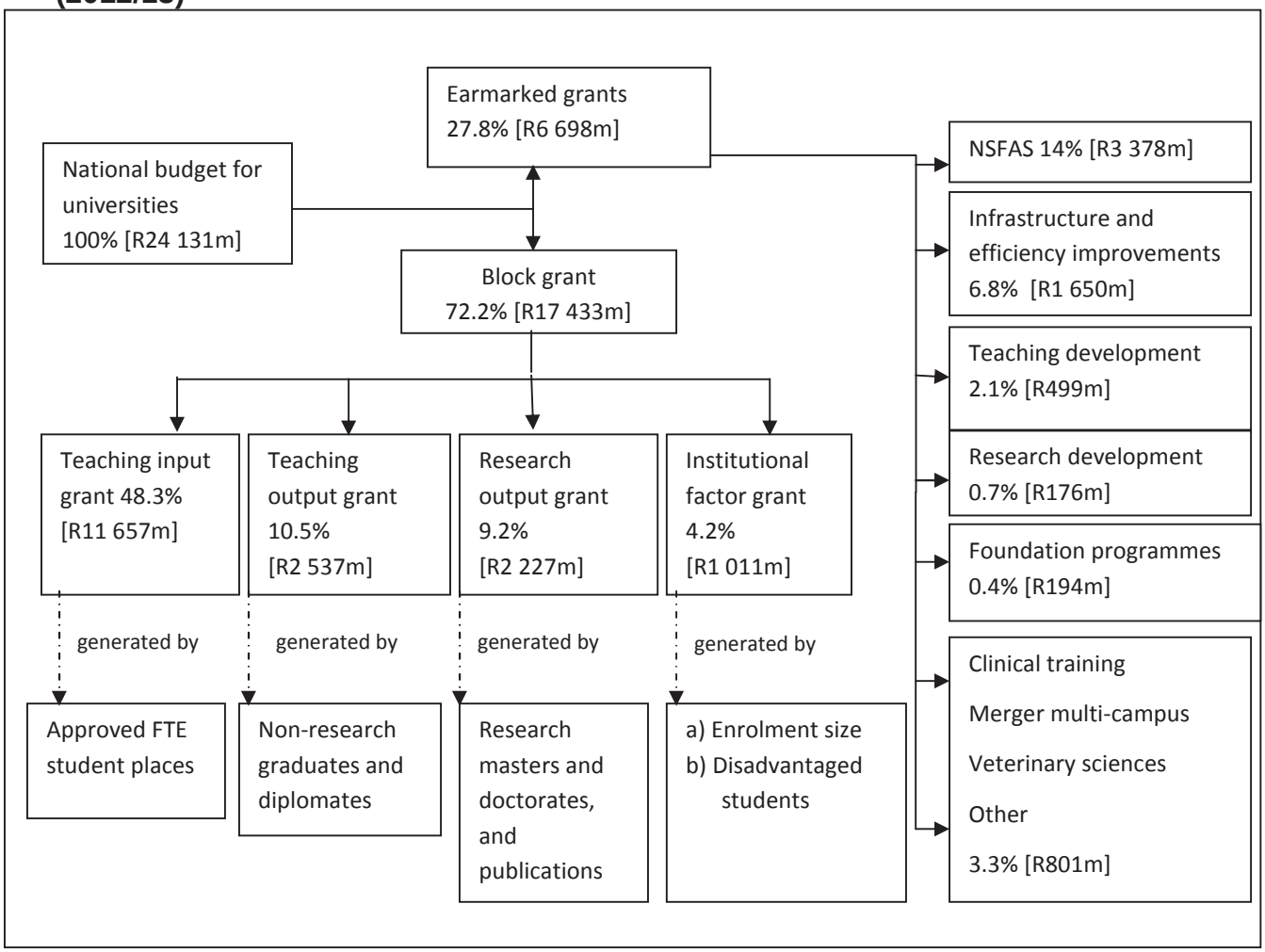
ii. *Teaching output funding*, which funds completed graduates, thereby encouraging increased success and throughput rates as a result of universities ensuring that students complete their studies.

iii. *Research output funding*, which encourages the publication of peer-reviewed articles and books, as well as the graduation of masters and doctoral students. The category of doctoral graduates receives the highest funding weight, as an incentive to produce much-needed graduates for research and innovation as well as the next generation of academic staff.

iv. The *institutional factor grant*, which consists of two components, the *institutional factor for size*, and the *institutional factor for disadvantage*. The institutional factor for size allocates additional funding to universities with an FTE enrolment of less than 25 000, due to the fact that it is more expensive to provide the full range of services at a small university than at a larger university that has the benefits of economies of scale. In other words, the institutional factor grant for size compensates smaller universities for the additional cost involved in providing the full range of student services, which is more costly at a small university. The *institutional factor for disadvantage* was introduced to provide an incentive for universities to enrol more African and coloured South African students as part of the redress drive. The institutional factor grants are a very important incentive for promoting racial diversity at all institutions.

v. *NSFAS funding*, which provides assistance to students with academic potential who cannot afford university education. NSFAS funding is also focused on redress and provides opportunities for the poor to participate in university education. NSFAS is a statutory body that receives an annual allocation of funding from the National Treasury through the Ministry of Education. NSFAS also raises funds from South African and international donors. The amounts available for student financial aid are allocated to universities by the NSFAS board.

Diagram 6: Division of the university budget between grant categories (2012/13)



Source: MHET (2011c: 3)

Note: m = million

vi. The main aim of *infrastructure and output efficiencies funding* is to increase the capacity of the university system to cope with the growth in student numbers, to provide the necessary infrastructure and equipment for improving the quality of teaching and learning and student success and completion rates. It is also aimed at

equipping universities to give effect to national goals and priorities by providing incentives to universities to deliver on the PME targets of the Minister.

vii. The *clinical training earmarked grant* provides funding to universities to fund the clinical component of health professional students, which is also a national priority area.

viii. The *foundation programme grant* provides funding for extended programmes aimed at addressing the under-preparedness of students from schools and improving their chances of success at university. It is also directed at redress, since the majority of these students originate from poor-quality school backgrounds.

ix. *Teaching development* and *research development grants* provide financial assistance to universities to develop support programmes that enhance their ability to increase student success and completion rates, as well as to enhance their capacity to produce research outputs.

x. The *merger multi-campus grant* provides funding to merged universities in support of the cost of running additional campuses as a result of the mergers.

xi. The *veterinary sciences earmarked grant* provides funding for the clinical training component of veterinary sciences programmes and to support the cost of running an animal hospital at the University of Pretoria.

xii. The *'other'* earmarked grants are as follows:

- National Institutes in Mpumalanga and the Northern Cape, which receive funding for the co-ordination of university education in these provinces;
- Establishment of universities in Mpumalanga and the Northern Cape, which provides seed funding for the establishment of two new universities in these provinces;
- Interest and redemption on loans that fund former agreements made for government contributions for the establishment of university infrastructure by means of government-guaranteed loans; and
- African Institute for Mathematical Sciences, which funds a special project aimed at producing postgraduate students in mathematics from formerly disadvantaged groups.

Block grants are funds generated by formulas, grids and weights within the funding framework. They are called 'block' grants because they are not earmarked for any specific purpose and can be spent at the discretion of the council of each university. Currently the block grants comprise four grants, namely: the teaching input grant, the teaching output grant, the research output grant and the institutional factor grant. As mentioned above, the institutional factor grant has two components: the institutional factor for size and the institutional factor for disadvantage.

The boxes at the bottom of Diagram 6 summarise the relationship between institutional data and the different sub-components of block grants. The report sections that follow offer explanations and examples of how an institution's shares of the various parts of the overall block grant are generated by the institution's data.

a) Teaching input grant

Diagram 7 summarises the processes involved in the calculation of the teaching input grant for any institution in any funding year n.

The key steps involved in the calculation of any institution's teaching input grant are as follows:

i. The institution's total of FTE enrolled students for year n-2 is taken to be a proxy for its approved total of FTE student places for year n, subject to adjustments being made (a) to correct data errors, (b) to make the n-2 total consistent with student rolling plans approved by the Minister, or (c) to make the n-2 total consistent with other conditions laid down by the Minister.

ii. The adjusted FTE total for year n-2 is passed through a grid that is approved on a rolling three-year basis by the Minister. This grid places FTE enrolments into categories that are weighted according to (a) course material (CESM categories), (b) course level (undergraduate and equivalent, honours and equivalent, masters and equivalent, doctoral and equivalent), and (c) instruction-delivery mode (contact or distance). The funding grid approved by the Minister has 32 cells, which can be represented in Tables 16 and 17 (below). Table 16 shows which CESM categories have been included in each funding group, and Table 17 gives weights by instruction-delivery mode, by funding group and by course level.

Diagram 7: Flow chart for the calculation of teaching input grants

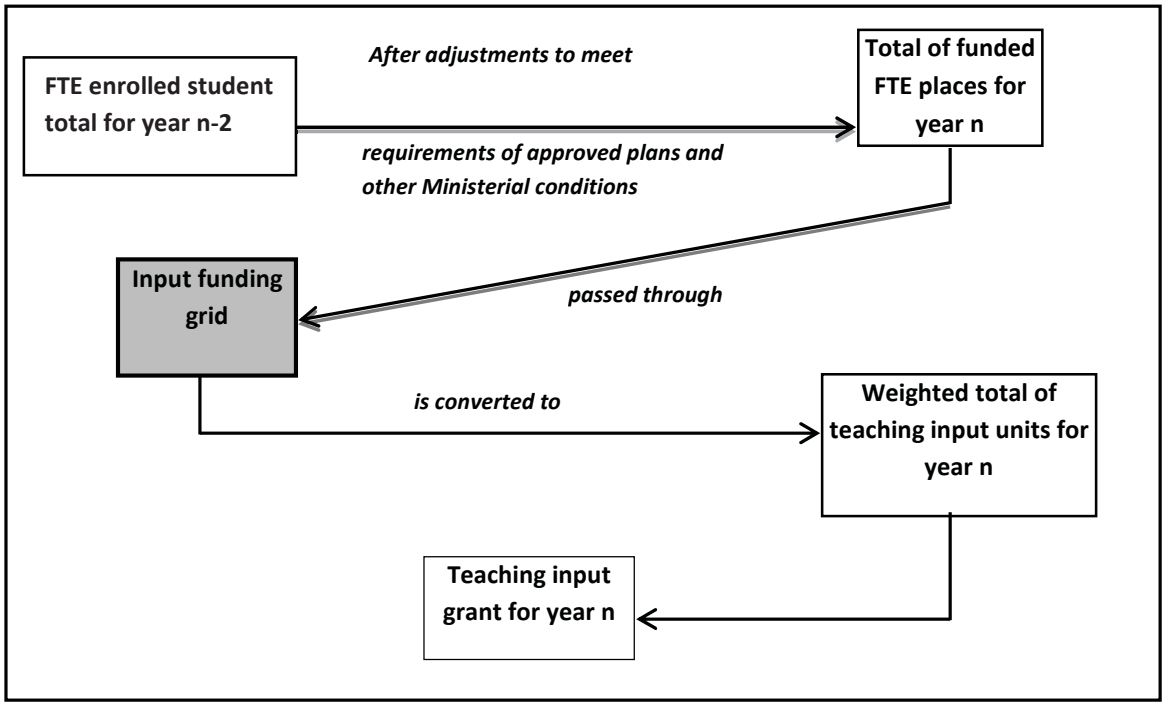


Table 16: Funding groups, by CESM categories

Funding group	CESM categories	Funding ratio at undergraduate level
1	07 education, 12 law, 18 psychology, 19 public administration and services	1
2	04 business, economics & management studies, 05 communication & journalism, 06 computer & information sciences, 11 languages, linguistics & literature, 17 philosophy, religion & theology, 20 social sciences	1.5
3	02 architecture & the built environment, 08 engineering, 10 family ecology & consumer sciences, 15 mathematics & statistics	2.5
4	01 agriculture & agricultural operations, 03 visual & performing arts, 09 health professions & related clinical sciences, 13 life sciences, 14 physical sciences, 16 military sciences	3.5

Table 17: Weighting factors for teaching inputs

Funding group	Undergraduate and equivalent		Honours and equivalent		Masters and equivalent		Doctoral and equivalent	
	Contact	Distance	Contact	Distance	Contact	Distance	Contact	Distance
1	1.0	0.50	2.0	1.0	3.0	3.0	4.0	4.0
2	1.5	0.75	3.0	1.5	4.5	4.5	6.0	6.0
3	2.5	1.25	5.0	2.5	7.5	7.5	10.0	10.0
4	3.5	1.75	7.0	3.5	10.5	10.5	14.0	14.0

It is important to note that there has been no distinction made between the instruction-delivery modes (distance and contact education) in the weights for FTE masters and doctoral students.

b) Teaching output grant

An institution's teaching output grant for any funding year n is dependent on (a) an **actual** total of non-research graduates and diplomates for the year n-2, and (b) a **normative** total of non-research graduates and diplomates (i.e. the total the institution is expected to produce, in terms of national benchmarks). These totals produce different grants for an institution (teaching output grant, and teaching development grant, respectively), as is shown in Diagram 8.

Diagram 8: Flow chart for the calculation of teaching output grants

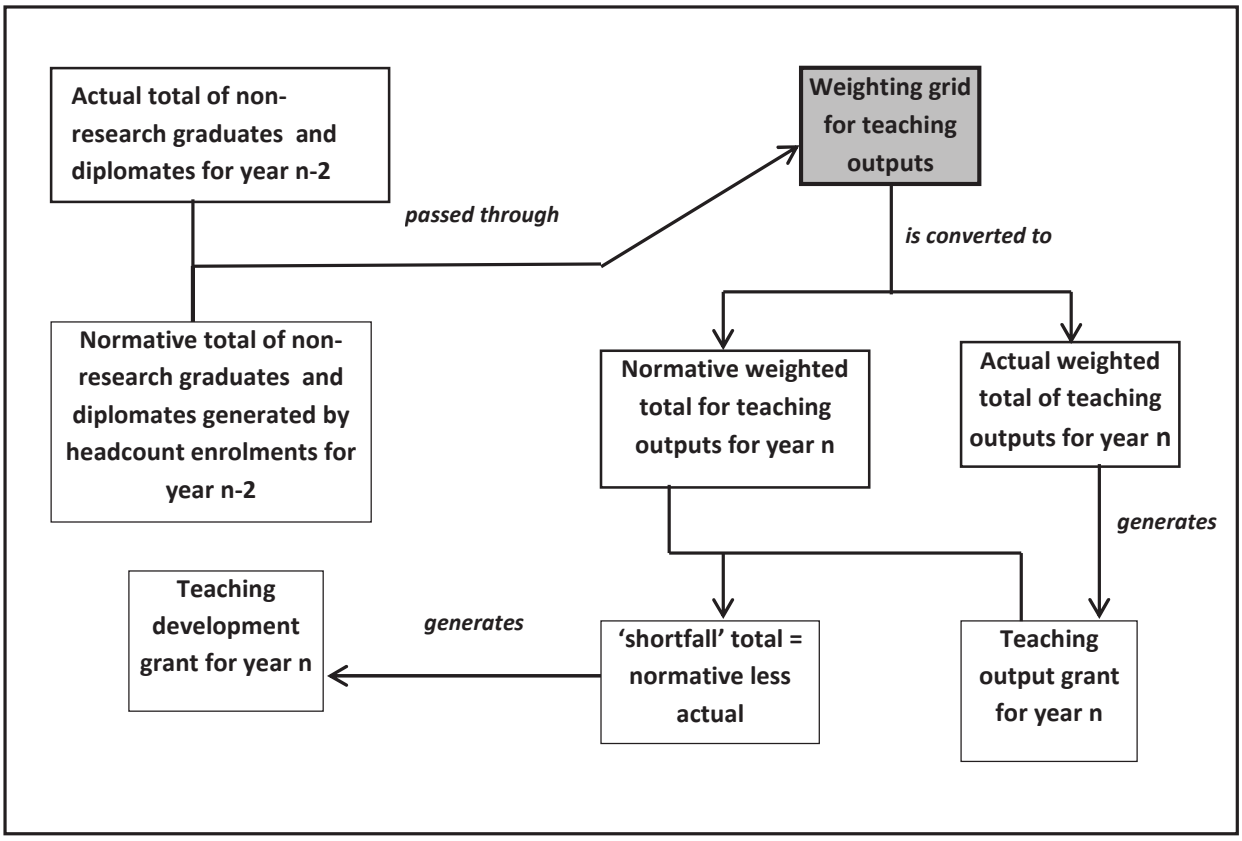


Table 18: Weighting factors for teaching outputs

Qualification type	Weight
First certificates and diplomas of two years or less	0.5
First diplomas and bachelor degrees of three years	1.0
Professional first bachelor degree of four years and more	1.5
Postgraduate and post-diploma diplomas	0.5
Postgraduate bachelor degrees	1.0
Honours degrees/higher diplomas	0.5
Non-research masters degrees and diplomas	0.5

i) The institution's output of non-research graduates and diplomates for year n-2 is weighted in accordance with a grid approved by the Minister (see Table 19, below) on a rolling three-year basis. The resulting total is the institution's actual weighted total of teaching outputs for funding year n-2.

ii) A normative total of teaching outputs for the institution is then calculated. This normative total is based on the institution's headcount student enrolments for year n-2 and a set of benchmarks approved by the Minister on a rolling three-year basis based on the benchmarks contained in Table 19. The outcome of the benchmark calculation is a normative total of graduates/diplomates, which must be passed through the weighting grid in Table 18 (above).

Table 19: Benchmarks for teaching outputs

	Graduates/diplomates as % of headcount enrolments	
	Contact	Distance
Undergraduate: up to three years	22.5	13.5
Undergraduate: four years or more	22.5	13.5
Postgraduate: up to honours	18.0	9.0
Postgraduate: up to masters	54.0	27.0

iii) Suppose that the result of passing any institution's total of actual graduates/diplomates for year n-2 through the grid in Table 18 is a weighted teaching output total **c**. Suppose also that the normative total of graduates/diplomates (generated by applying the benchmarks in Table 19 and the weighting grid in Table 18 to the same institution's

headcount student enrolment for year n-2) produces a normative weighted teaching output total of **d.** Suppose that the sum of all **actual** weighted teaching outputs for the system (Σ**c)** = **C,** and that the sum of all weighted **normative** teaching outputs for the system (Σ**d)** = **D**. If the sum allocated in the national budget for teaching outputs = **O**, then any institution's teaching output grant **o** will be the proportion its **actua**l weighted output units have of the weighted **normative** total for the system, multiplied by the total amount allocated for teaching outputs in the national budget. The formal representation of these calculations is as follows:

o = [c/D] * O

iv) It is likely that the normative total of weighted teaching outputs for the system (**D**) will for some time exceed the actual total (**C**). It follows, from the calculations in iii) above, that the actual amount disbursed in the form of teaching output grants (Σ**o**) will be less than the sum provided in the national budget (**O**). Suppose now that the budget allocation for teaching outputs less the actual amount dispersed = **S.** This 'surplus' **S** will be distributed as a teaching development grant, in the way described in v) below, to institutions whose actual total of teaching outputs is less than their normative total.

v) An institution's eligibility for a teaching development grant will be determined in the following way:

A calculation will be made, using only institutions where **c**<**d,** of a total **E** of teaching output shortfalls. If the output shortfall of a specific institution = **e**, then the teaching development grant for which the institution is eligible will be the proportion its shortfall total **e** represents of the shortfall total **E**, multiplied by the 'surplus' **S** on teaching output grant allocations. The formal representation of these calculations is as follows:

possible teaching development grant = [e/E] * S

vi) Universities received the teaching development grant as part of the block grant allocation during the migration period from 2004/05–2007/08. However, in 2008/09, with the full implementation of the funding framework, the teaching development grant became an earmarked grant. Universities had to submit applications containing the planned utilisation of these funds and, based on the merit of these proposals, these funds were allocated as earmarked grants on which the universities had to submit reports before future allocations were made.

vii) The allocation formula for teaching development funds was changed for the 2012/13 financial year. This new allocation formula is discussed in Section 7.1 of the current report.

c. Research output grant

An institution's research output grant for any funding year n is dependent on (a) **actual** totals of research graduates and research publication units for the year n-2, and (b) a **normative** total (i.e. the total number it was expected to produce, in terms of national benchmarks). These totals produce different grants for an institution, as shown in Diagram 9 (below).

The key steps involved in the calculation of any institution's research output grants are as follows:

i) The institution's output of research graduates and publications for year n-2 are weighted in accordance with a grid that is approved on a three-year rolling basis by the Minister. The resulting total is the institution's actual weighted total of research outputs for funding year n-2. The grid is set out in Table 20 (below).

Diagram 9: Flow chart for the calculation of research output grants

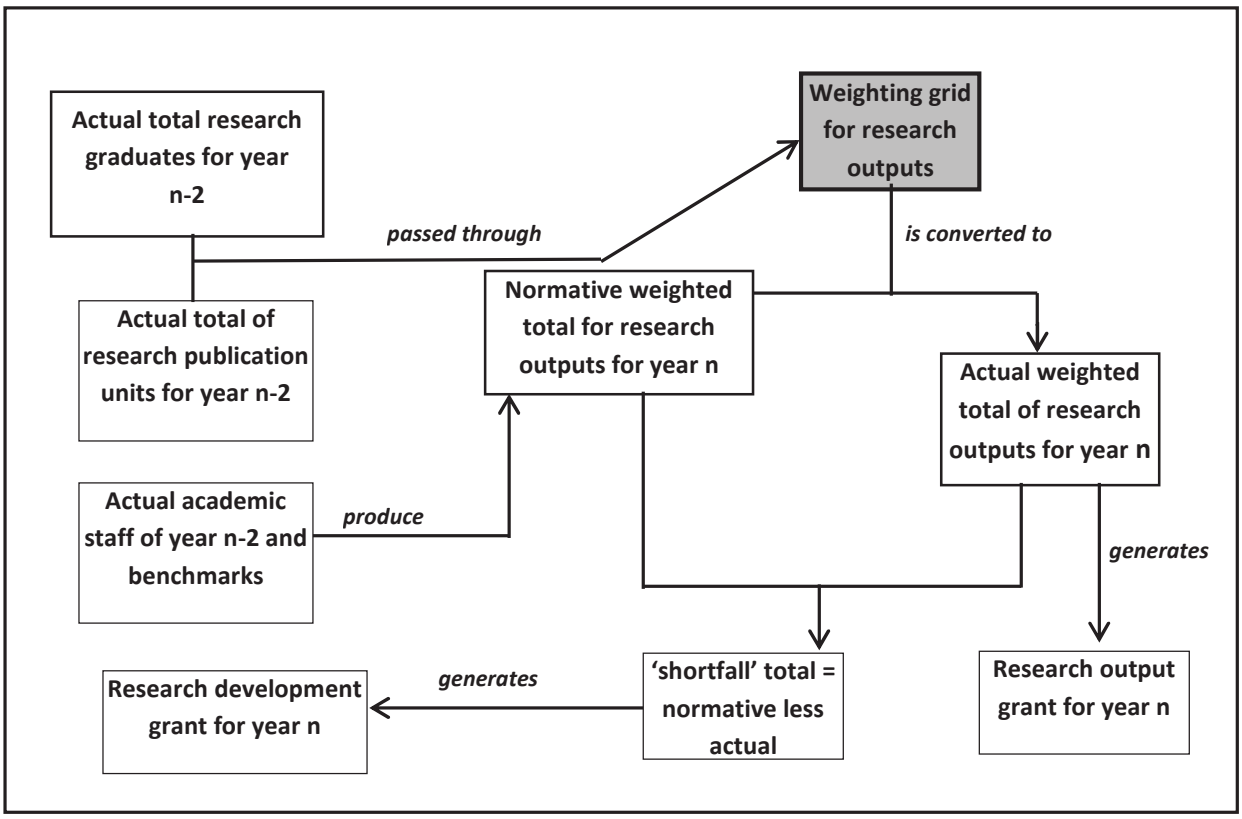


Table 20: Weights for research outputs

Research output	Weight
Publication units	1
Research masters graduates	1
Doctoral graduates	3

ii) A normative total of research outputs for the institution is then calculated. This normative total is based on the institution's total of permanently appointed instruction/research staff for year n-2 and a set of benchmarks that are approved on a three-year rolling basis by the Minister. The benchmarks approved for the period 2004/05–2006/07 are set out in Table 21 (below). These ratios were increased by 13% for the 2012/13 funding year from the previous ratios, due to huge increases in research outputs over recent years, to ensure that funding remained for earmarked research development grants.

Table 21: Normative ratios of weighted publication units to permanently appointed instruction/research staff members (as from 2012/13)

	Ratio from the 2012/13 financial year
Universities	1.4125
Universities of technology	0.5650
Comprehensive universities:	
University of Johannesburg	1.0961
Nelson Mandela Metropolitan University	1.0509
University of South Africa	1.3108
Walter Sisulu University	0.8249

iii) Suppose that the result of passing any institution's total of research graduates and publication units for year n-2 through the grid in Table 20 is an actual weighted research output total **f**. Suppose also that the normative total of weighted research outputs (generated by applying the benchmarks in Table 21 to the same institution's

total of permanently appointed instruction/research staff for year n-2) = **g.** Suppose that the sum of all weighted **normative** research outputs for the system (Σ**g)** = **G**. If the sum allocated in the national budget for research outputs = **Q**, then any institution's research output grant **r** will be the proportion its **actua**l total of weighted output units has of the weighted **normative** total for the system, multiplied by the total amount allocated for research outputs in the national budget. The formal representation of these calculations is as follows:

r = [f/G] * Q

iv) It is likely that the **normative** total of weighted research outputs for the system will exceed the actual weighted total produced. It follows, from the calculations in iii) above, that the actual amount disbursed in the form of research output grants (Σ**r**) will be less than the sum provided in the national budget (**Q**). Suppose now that the budget allocation for research outputs less the actual amount dispersed = **U.** This 'surplus' **U** will be distributed as a research development grant, in the way described in v) below, to institutions whose actual total of research outputs is less than their normative total.

v) An institution's **eligibility** for a research development grant will be determined in the following way:

A calculation will be made, using only institutions where **f<g,** of a total **H** of research output shortfalls. If the output shortfall of a specific institution = **h**, then the research development grant for which the institution is eligible will be the proportion its shortfall total **h** represents of the shortfall total **H**, multiplied by the 'surplus' **Q** on research output grant allocations. The formal representation of these calculations is as follows:

possible research development grant = [h/H] * Q

vi) Universities received the teaching development grant as part of the block grant allocation during the migration period from 2004/05–2007/08. However, in 2008/09, with the full implementation of the funding framework, the teaching development grant became an earmarked grant. Universities had to submit applications containing the planned utilisation of these funds and, based on the merit of these proposals, these funds were allocated as earmarked grants on which the universities had to submit reports before future allocations were made.

d. Institutional factor grants

i. Institutional grant for disadvantage

a) For the purposes of this grant, disadvantaged students are deemed to be African or coloured students who are South African citizens, and who are enrolled in either (a) contact education programmes, or (b) distance education programmes offered by the dedicated distance education institution. For funding year n, calculations are made for each contact institution of the proportion that African and coloured students who are South African citizens represent of the institution's total unweighted FTE contact student enrolment in year n-2. Equally, calculations are made for each dedicated distance education institution of the proportion of its total unweighted FTE student enrolment represented by African and coloured students who are South African citizens.

b) The institutional factor for disadvantage operates by adding an amount to the teaching input grants of institutions, depending on what their proportions are of disadvantaged students. In the case of the contact institutions, a calculation is made of the teaching input grant generated by the institution's **contact** students, and a proportion is then added to this **contact teaching grant**. In the case of the dedicated distance education institution, a calculation is made of the teaching input grant generated by the institution's **distance** students, and a proportion is then added to this **distance teaching grant**. These proportions are approved by the Minister on a rolling three-year basis.

c) The teaching input units that are added to the teaching input grant are calculated as follows:

- The percentage of African and coloured enrolled unweighted contact mode FTE students of South African citizenship is calculated as a percentage of the university's total enrolled unweighted contact mode FTE students.
- If the percentage is 0%–40% the weight is 1.0. If the percentage is 80%–100%, the weight is 1.1%. If the percentage is larger than 40%, but smaller than 80%, the weight is as follows: 0.25 x [percentage] +0.9.
- This weight is then multiplied by the total enrolled weighted contact FTE students. The difference between this higher teaching input total and the teaching input units before the provision for disadvantaged students is the

additional weighted contact FTE students, to make provision for disadvantaged students.

ii. Institutional grant for size

a) These size factors take account of the fact that economies of scale come into play as the FTE enrolment size of an institution increases. The institutional size factor operates by giving additional teaching input grants to small institutions, depending on the size of their FTE student enrolments.

b) The teaching input units that are added to the teaching input grant are calculated as follows:

- If the total student size is smaller than 4 000 FTEs, then the weight is 1.15.
- If the total student size is larger than 25 000 FTEs, then the weight is 1.00.
- If the total student size is larger than 4 000 FTEs, but smaller than 25 000 FTEs, then the weight is: - 0.0000071428 x [total unweighted contact and distance students] + 1.17857.
- This weight is multiplied by the total weighted contact and distance FTE students (teaching input units). The difference between this higher teaching input unit and the teaching input unit before provisioning for institutional size represents the additional enrolled weighted FTE students that are funded for the institutional factor grant.

5.4 The overall architecture of the funding framework

i. Introduction

The previous section of this report has shown that while not all of the transformational goals have been reached, the new funding framework has certainly contributed towards the achievement of these goals for the relatively short period of its full implementation (i.e. 2008/09–2012/13). Improvements have been made with regard to achieving a more representative student body, showing a higher growth rate in graduates than enrolments, increasing research publication units, channelling more funds towards universities that have a higher share of students from disadvantaged backgrounds, increasing student access to higher education through increased NSFAS funding, and so on. However, disappointments

included the continuing large numbers of dropouts from the system, the persistence of under-development of the majority of HDIs, the lower-than-expected growth in the SET fields, the stagnation of postgraduate education, and the low increases in the numbers of masters and doctoral graduates.

This section provides an overview of inputs received from universities and other role-players in higher education with regard to the overall architecture of the funding framework. In most cases the submissions made to the Committee supported the overall structure, components and allocation methodologies of the funding framework. The major problems identified were more concerned with the levels of funding and the perceived diminishing of government financial support in the form of subsidies to universities, as well as with the financial challenges faced by the under-developed universities in the system. Various proposals were made with regard to changes in the percentage allocations made for the various components of the funding framework and for the introduction of additional earmarked grants.

ii. Overview of inputs received from role-players

The inputs received by universities and other role-players with regard to the architecture of the funding framework are presented according to various themes derived from the inputs.

a) The use of formulas in the current funding framework is beneficial for ongoing operational expenditure

The use of formulas in the current funding framework is supported, since formulas have the following characteristics:

i. They *standardise the budgetary mechanism* by using a formulated set of rules based on government's and higher education institutions' needs if they are founded upon the principles of rationality, objectivity and quantification.

ii. They have the important attributes of *predictability and certainty*, which *enables planning*, thereby diminishing the possibilities of ad hoc decisions on behalf of and special pleading by single institutions.

iii. They provide a system for the *equitable division* of the available resources along lines that have been established and agreed upon, and can serve to *emphasise the policy decisions* necessary for maximising society's benefits by applying, for example, weights for priority areas.

iv. They *facilitate comparisons* among institutions and activities by requiring explicit quantification and they therefore foster the attainment of efficiency.

v. They are *easier to administer* than complicated line-budgetary processes.

b) The use of block grants

i. The freedom to decide on expenditure of subsidies received *promotes* the *autonomy* of universities.

ii. The use of block grants *promotes efficiency*, since universities have the information available on the needs of the institution to inform decision making with regard to expenditure and can make alterations in the planned allocations when these become necessary.

iii. Block grants have formed the *core of university funding* within the current (i.e. new) funding framework. Block grants are critical for universities to fund operating expenses, including salaries, related to core activities. It is therefore vital that *block* grants be adequate to meet operating expenses, including salaries, related to core activities.

iv. In the past block grant allocations to universities did not keep pace with inflation and student enrolment growth, and in real terms there was a decline in income per FTE enrolled student. More recently there has been good growth in block grants and this trend is to be welcomed and must be continued.

v. Unless there is stability and consistency in block grant funding, there will be considerable financial and operational instability at universities. Indeed, an increase in block grant funding for universities is necessary to enable universities to effectively discharge their core purposes and mandates and competitively recruit and retain outstanding academics.

vi. Any change to the funding formula should strive to ensure consistent and adequate real growth in the quantum of block grants to universities, even as increased allocations to earmarked grants for important and agreed-upon initiatives (such as, for example, funds to promote community engagement, or to develop the next generation of academics, or to improve the quantity and quality of residence accommodation) should also be welcomed. However, given the importance of block grants to universities, growth in earmarked grants should not be *at the expense of* block grants.

vii. The decrease in block grant allocations opens the door for decreasing the expenditure on fixed assets. Allocations for the maintenance of buildings and the renewal and replacement of equipment are often the first to be cut.

viii. Because of constraints on funding, enrolment planning must continue in order to maintain the real value of per capita subsidies. Steering of the sector through indicative and enrolment planning is an acceptable way of ensuring that sufficient resources are allocated to areas needed by the economy and society.

ix. The value of subsidies for different university activities must be based on those activities' relative costs, and the use of the 'funding grid' and weighted teaching input units as a distributing mechanism is supported.

x. Subsidies should ideally be based on outputs. However, as doing this exclusively would entail some disadvantages, a combination of outputs and inputs is normally used to 'drive' a subsidy formula. Over time, greater emphasis should be given to outputs.

c) Earmarked grants

i. Worldwide, institutions are nowadays expected to be accountable for the ways they spend public money. Universities are no exception. Accountability can be enforced by using earmarked grants; however, it was argued that this should not be done at the expense of the block grant component. The better method in the long run is instilling a sense of accountability in all custodians of public funds, including universities, by revising the sector's auditing and reporting requirements (to include performance audits). Simultaneously, integrated reporting, as proposed in the King III Report, could be introduced.

ii. There is a need for some earmarked grants in order to better steer the higher education sector, in addition to other instruments such as the enrolment planning exercise, or specific agreements such as the clinical training grants or infrastructure grants. It is important that infrastructure and capital allocations always remain earmarked grants, to ensure that this funding is not utilised for operational expenses.

iii. There was overall dismay expressed in terms of the proliferation of earmarked grants in the system. These require some form of audited reports regarding the expenditure of the allocations, which necessitate additional administrative structures and auditing costs at universities. Universities also objected to the increase in earmarked grants

because of the fact that some universities benefit to a larger extent than others from the increasing (both in terms of type and size) earmarked funding allocations.

d) A funding formula as opposed to a funding framework

A funding formula provides financial stability in so far as its elements are fixed and institutions are able to rely on these in their planning. By contrast, the current South African subsidy system is based on a 'funding framework'. Although in many respects the framework shares the characteristics of a formula (and the terms are generally used interchangeably), the framework's parameters may be altered by the Minister through publishing a 'Ministerial statement' (subject to the criteria of the Higher Education Act). The funding framework therefore does not offer institutions the longer-term stability of a formula.

iii. Conclusion

In general there is widespread support for the current design of the funding framework based on its steering function; the predictability, which has made possible the linkage of institutional and system planning to funding; and its transparency with regard to determining institutional allocations. Concerns have however being raised by the majority of universities with regard to the erosion of the block grant through the introduction of more and more earmarked grants, as well as the decline in the real values of the funding units over time. Concerns have also been raised about the fact that the increased numbers of earmarked grants have been introduced without any motivation for these changes. A call has been made for minimal changes to be made to the block grant and for real increases in the Rand values of the funding units. The retention of the basic architecture of the current funding formula is supported, with requests for the refinement of the elements of the funding framework to enhance the efficacy of the formula. Universities have, however, alluded to the fact that for any change to be effective, the overall budgetary allocation to higher education must increase, otherwise amendments to the formula without additional funding would have unintended negative consequences. It was noted that significant fluctuations in government grants would probably compel universities to offset this in fee increases, which would adversely impact student access despite increased NSFAS and other access-support provisioning.

iv. Recommendations

Specific recommendations are made with regard to each component of the funding framework, based on the inputs received, the shortcomings identified and strategies that will address these shortcomings. In summary:

i. The Committee supports the formula-based approach.

ii. Block grants are very important for ongoing operational costs, and earmarked grants are needed to steer the higher education system. The retaining of block grants and earmarked grants is recommended.

iii. Based on the submissions received, and an analysis of both the effectiveness and shortcomings identified, the Committee recommends that the current principles, goals and overall architecture of the funding framework be retained with adjustments that will be recommended with regard to each component of the funding framework. Specific recommendations will also be made with regard to HDIs.

5.5 The level of government spending on higher education in South Africa in relation to the country's GDP

i. Introduction

Woodhall (2007) notes that a major challenge faced by governments everywhere is the reform of financing higher education in response to pressures of rising private demand for higher education and heavily constrained public budgets. She further observes that there is a worldwide trend in industrialised, transitional and developing economies towards greater reliance on tuition fees and student loans to finance the expansion of higher education. This has been a profound change evident since enrolments expanded and higher education systems in more and more countries moved from an elite system of higher education (less than 15% of the relevant age group enrolled in higher education) to mass (15%–50%) or even universal (more than 50%) access (Woodhall 2007: 6). The World Bank (2010), in its report *Financing Higher Education in Africa*, observes that the decline in public expenditure per student is having an adverse impact on the quality and relevance of education programmes. Admitting an ever-increasing number of students – in the absence of increased funding to support increased numbers – leads to deteriorating conditions at universities. The World Bank notes in the same report (2010) that universities are finding it increasingly difficult to maintain appropriate levels of academic staff, lecture halls are overcrowded, and

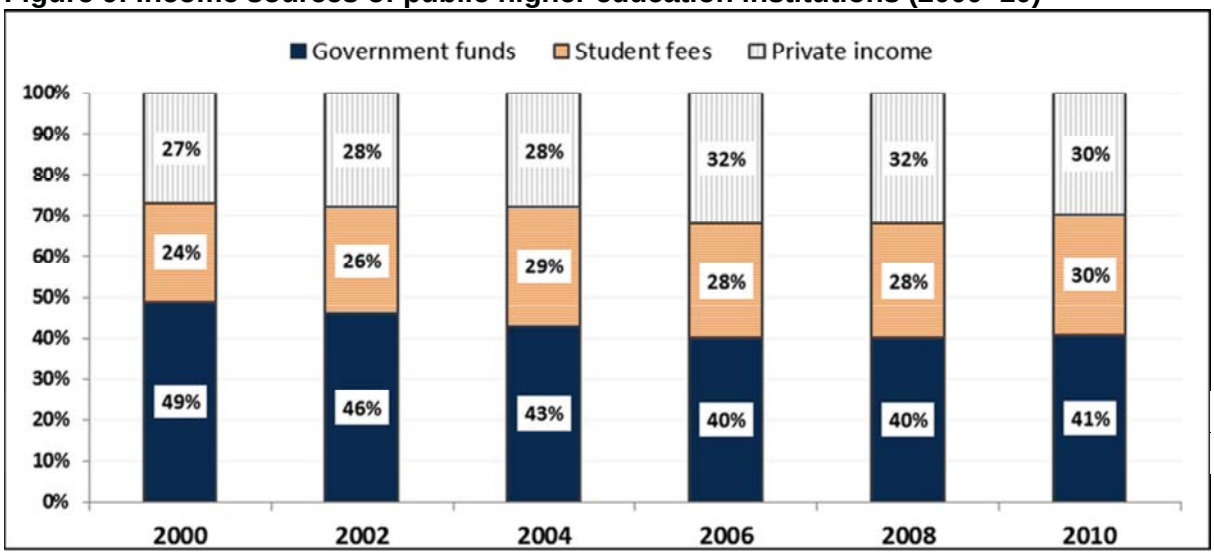
buildings are falling into disrepair, teaching equipment is not replenished, investment in research and training for new academic staff is insufficient, and many academics must supplement their incomes by providing services to the private sector.

This section of the report provides an overview of changes in the income sources of the public universities in South Africa, and of the level of public spending on higher education in South Africa compared to international spending patterns. Recommendations are then made with regard to the current levels of expenditure, and with regard to improving accountability. A detailed analysis of enrolment patterns and the impact of 'under- and over-enrolment' in the universities is also provided. The section concludes with recommendations on how the issue of under- and over-enrolments needs to be dealt with by the Ministry.

ii. Income sources of public universities

Figure 9 shows the income sources of public higher education institutions for the period 2000–10. By 'government funds' is meant the total of block grants as well as earmarked grants that are paid by the Ministry in the form of subsidies. 'Student fees' includes all tuition and residence fees paid by students to the universities. 'Private income' is all other income – through research contracts, donations, investments, renting out of facilities and so on.

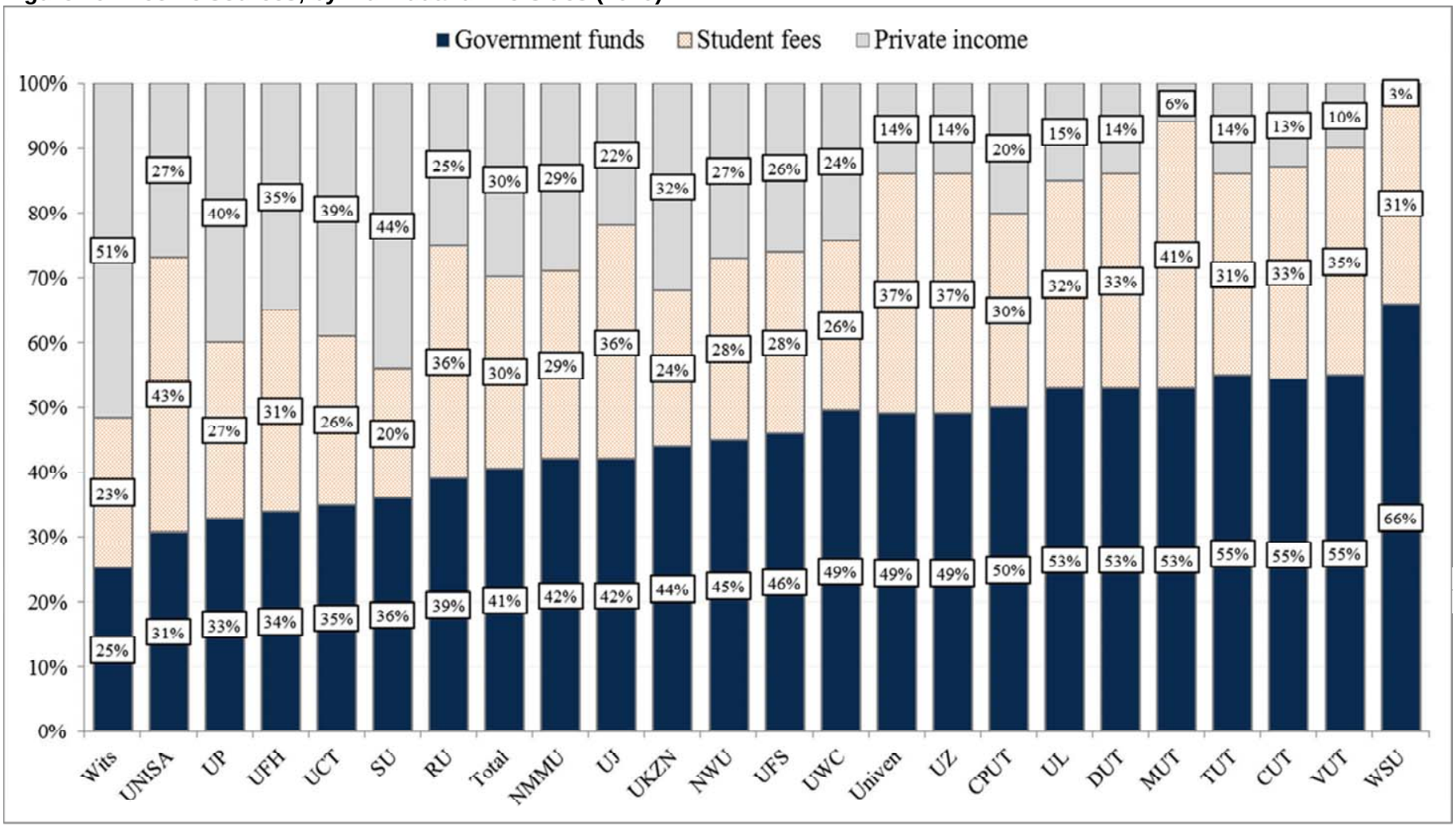
Figure 9: Income sources of public higher education institutions (2000–10)



Source: DHET (2012a)

The proportions reflected in Figure 9 (above) are averages for the system as a whole. These proportions can differ widely between institutions. Figure 10 (below) shows the proportions of the income sources for individual universities for 2010. As shown in Figure 10, government grants as a proportion of total income can be as low as 25% (University of the Witwatersrand) if a university is able to raise large amounts of private funds through research contracts, donations and investments; and can be as high as 66% (Walter Sisulu University) in the case of universities that are not able to generate substantial amounts of private income. It is evident from Figure 9 (above) that government funds declined from 49% of the total income of universities in 2000 to 41% in 2010.

Figure 10: Income sources, by individual universities (2010)



Source: DHET (2012a)

iii. Level of government spending on higher education in South Africa

In 2004/05, as already extensively discussed, a new funding framework for higher education institutions came into effect, reflecting the following state budgets and year-on-year increases, as shown in Table 22.

Table 22: State budget for higher education institutions (2004/05–2012/13)

Year	Block grant (R' million)	Earmarked grant (including NSFAS and infrastructure funding) (R' million)	Total grant (R' million)	% increase year on year (nominal terms)
2004/05	8 568	1 311	9 879	
2005/06	9 145	1 635	10 780	9.1
2006/07	9 956	1 799	11 755	9.0
2007/08	10 234	2 823	13 057	11.1
2008/09	11 550	3 570	15 120	15.8
2009/10*	12 767	3 975	16 742	10.7
2010/11*	14 533	4 575	19 108	14.1
2011/12*	16 387	5 610	21 997	15.1
2012/13*	17 434	6 847	24 281	10.4

Source: DHET (2012g)

Notes: 'Nominal terms': In economics, nominal value refers to a value expressed in money of the day (year etc.), as opposed to real value, which adjusts for the effect of inflation on the nominal value. * Excluding Funza Lushaka Bursary Programme.

The increase in the block grant over the period 2004/05–2012/13 amounts to R8 866 million. The increase in the block grant indicates an annual average growth rate of 9.3% (nominal terms) whereas the total grant increased by R14 402 million over the same period. An annual average growth rate of 11.9% (nominal terms) is attributable to the total grant for the period 2004/05–2012/13. The difference between the block grant's annual growth rate and that of the total grant is because of the increase in the earmarked grants, which amounts to an average annual growth rate of 23% (nominal terms). The earmarked grants include NSFAS and infrastructure funding.

It is clear from Table 23 (below) that the state budget for universities as a percentage of total state finance decreased from 2.68% to 2.47% over the period 2004/05–2011/12, whereas the state budget for universities as a percentage of GDP increased from 0.68% to 0.75% over the same period. The reason for the increase in the state budget as a percentage of GDP and the decrease in

state budget as a percentage of total state finance is that although GDP has increased annually on average at 10.5% (nominal terms), state finance has increased annually on average at 13.4% (nominal terms).

Table 23: State budget for higher education institutions as a percentage of GDP and total state finance

Year	GDP (R' million)	Total state finance (R' million)	State budget for universities (R' million)	State budget for universities as a % of GDP	State budget for universities as a % of total state finance
2004/05	1 449 020	368 459	9 879	0.68	2.68
2005/06	1 613 812	416 684	10 780	0.67	2.59
2006/07	1 832 763	470 193	11 755	0.64	2.50
2007/08	2 078 822	541 443	13 057	0.63	2.41
2008/09	2 312 965	635 953	15 120	0.65	2.38
2009/10	2 442 598	747 197	16 742	0.69	2.24
2010/11*	2 666 894	809 923	19 108	0.72	2.36
2011/12*	2 914 862	888 923	21 997	0.75	2.47

Source: DHET (2012g)

Note: * Excluding Funza Lushaka Bursary Programme.

It is conclusive that the average annual increase in state funding for universities (11.9%, nominal terms) did not increase proportionately at the same rate as total state finance for the period (13.4%, nominal terms). If that had been the case, the state budget for universities in proportion to total state finance would have remained the same over the period.

In theory, if the average annual increase in state funding for universities (11.9%, nominal terms) had been the same as the average annual increase in total state finance (13.4% nominal terms) over the period 2004/05–2011/12, then the state budget for universities in 2011/12 would have been R23 823 million, which is R1 826 million more than the actual figure of R21 997 million. If we took the theoretical value of the 2011/12 state budget for universities into consideration when determining the state budget for universities as a percentage of GDP, then the percentage would have been 0.82%, which is considerably more than the actual figure of 0.75% for 2011/12.

Table 24: Summary of government allocations to public universities (2004–11)

	2004	2005	2006	2007	2008	2009	2010	2011
R' million								
Block grants	8 568	9 145	9 956	10 233	11 550	12 767	14 533	16 387
Direct earmarked transfers	733	771	873	1 725	2 248	2 531	2 983	2 966
NSFAS	578	864	926	1 099	1 322	1 444	1 592	2 644
Total	**9 879**	**10 780**	**11 755**	**13 057**	**15 120**	**16 742**	**19 108**	**21 997**
% of government allocations								
Block grants	86.7%	84.8%	84.7%	78.4%	76.4%	76.3%	76.1%	74.5%
Direct earmarked transfers	7.4%	7.2%	7.4%	13.2%	14.9%	15.1%	15.6%	13.5%
NSFAS	5.9%	8.0%	7.9%	8.4%	8.7%	8.6%	8.3%	12.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: DHET (2012g)

Notes: *Block grants* are not earmarked for any specific purpose and can be spent at the discretion of the council of each university. *Direct earmarked transfers* are funds transferred to individual universities to be used for designated purposes. *NSFAS* are funds transferred to the statutory body that controls the National Student Financial Aid Scheme.

The average annual growth rate of block grants over the period 2004–11 was 9.7%, whereas the average annual growth rates of direct earmarked transfers and NSFAS were 22.1% and 24.3% respectively. These growth rates explain why the proportion of block grants to total grants had decreased, from 86.7% in 2004 to only 74.5% in 2011 (see Table 24).

It is of interest to compare expenditure on higher education internationally to get an understanding of whether South Africa is spending an adequate percentage of its GDP on higher education. Table 25 shows the percentage of public expenditure on higher education as a percentage of GDP for different regions of the world for 2006 (or closest year) as well as higher education as a share of education expenditure for the same period.

Table 25: Public expenditure on higher education (2006 or closest year)

Country group	Expenditure as % of GDP	HE expenditure as % of education expenditure
Africa	**0.78**	**20.0**
Low-income	0.63	20.0
Other	1.06	20.1
OECD	**1.21**	**23.4**
Non-African developing countries	0.66	17.6
World	**0.84**	**19.8**

Source: This table was reconstructed from Tables 2.1 and 2.2 in the World Bank report (2010).

In 2011, South Africa's state budget for universities as a percentage of GDP was 0.75%, which is more or less in line with Africa as a whole (0.78%). When compared to OECD countries (1.21%) and the rest of the world (0.84%), South Africa lags behind in this regard. Within the G-20 group of countries, South Africa has the lowest levels of higher education funding (Table 26).

Table 26: Higher education funding as a percentage of GDP in selected G20 countries

Country	2009
Saudi Arabia	2.3%
Russian Federation	1.8%
Argentina	1.4%
India	1.3%
Brazil	0.8%
Indonesia	0.7%
South Africa	**0.6%**

Source: OECD (2012: 246)

South Africa's funding of higher education does not compare favourably with that of fellow middle-income countries such as Botswana, Chile, Hungary or Mauritius, among others. Overall, it is important to emphasise that investing in higher education at sufficient levels is critical for it to contribute optimally to the advancement of our society.

The second part of Table 25 shows that higher education expenditure as a percentage of education expenditure for Africa was 20%; for OECD countries it was 23.4%; and for the rest of the world it was 19.8% in 2006 (or closest year). In 2011 South Africa's estimated higher education expenditure as a percentage of education expenditure was approximately only 12% (OECD 2012: 246). This figure is a lot lower than the averages depicted in Table 25 (above); that is, Africa and the world as a group spend on average 8% more on higher education as a percentage of education expenditure, and for OECD countries the proportion is almost double (23.4%). If South Africa in 2011 spent the same proportion of education expenditure on higher education as the rest of the world did in 2006, then the state budget for universities would have been R37 422 million (+- R189 billion multiplied by 19.8%), which is R15 425 million more than the amount that was actually set aside (2011: R21 997 million). It can be concluded that South Africa's expenditure on higher education is lower than desirable.

The FFC (2012) did an analysis showing the extent to which government grants had declined per FTE enrolled student over the period 2000–10. Table 27 shows that during that period, the total income of public universities grew at an average rate of 11.6% in nominal Rands and 5.2% in real Rands, with different growth rates for the three main funding categories. In real terms, the category of government grants increased by an average annual rate of 3.3%, which was about half the increases in student fees (7.1%) and private income (6.4%).

Table 27: Income in 2000 compared to 2010 income (R' million)

	2000	**2010**		**Average annual growth (2000–12)**	
		Nominal	**Real**	**Nominal (%)**	**Real (%)**
Government grants	6.628	16.655	9.210	9.7	3.3
Student fees	3.381	12.132	6.709	13.6	7.1
Private income	3.591	12.090	6.686	12.9	6.4
Total	**13.600**	**40.877**	**22.605**	**11.6**	**5.2**

Source: DHET (2012a)

Note: In the table, nominal Rands are calculated from DHET summaries of financial statements included in the annual reports of each university. Real Rand calculations are based on nominal Rand totals and the CPI data from Statistics South Africa.

In Table 28 (below) the income totals from Table 27 are divided by the university system's full FTE enrolled student totals, which were 386 000 in 2000 and 600 000 in 2010. These totals do not take account of the weights in the funding grid for teaching input units.

Table 28: Income per FTE enrolled student (R'000)

	2000	2010		Average annual growth (2000–12)	
		Nominal	Real	Nominal (%)	Real (%)
Government grants	17.2	27.8	15.4	4.9	-1.1
Student fees	8.8	20.2	11.2	8.7	2.5
Private income	9.3	20.2	11.1	8.0	1.8
Total	**35.2**	**68.1**	**37.7**	**6.8**	**0.7**

Sources: Nominal and real Rand data is taken from Table 22; FTE student data is from HEMIS (DHET 2012e).

Table 28 shows that government grants per FTE enrolled student rose from R17 000 in 2000 to R27 800 in 2010 in nominal Rands. Student fees per FTE enrolled student rose in nominal Rands from R8 800 in 2000 to R20 200 in 2010. The average growth rates show that, in real terms, government funding per FTE enrolled student fell by 1.1% annually between 2000 and 2010, while student tuition fees per FTE increased by 2.5% per year. Based on the different increases in fee income and government grants, it can be concluded that the amount of government funding is not sufficient to meet the needs of the public university system. When the SAPSE funding framework was replaced by the current funding framework in 2003, no mechanisms were put in place to determine how much government funding would be appropriate for public universities.

iv. Overview of inputs received from role-players

i. The question of what state funding should cover is a moot point. There is value in calculating the full costs of higher education, and reaching agreement on what levels of income should be derived from tuition fees and third-stream income. Although the burden of university costs must be borne by the fiscus and the student body together, the real values of subsidies per student should not be allowed to be eroded. A mechanism should be introduced to ensure this; in other words, a mechanism for dealing with higher education inflation is necessary. As the current funding framework does not have a way of dealing with higher education inflation, this must be seen as one of the primary weaknesses of the current funding framework.

ii. Even though the state may not be able to cover the total costs of providing higher education, it is important for the DHET to continually remind Treasury about the full costs, and to engage Treasury on greater levels of support.

iii. It is fundamentally important that universities be funded *adequately* in relation to the goals that we wish to pursue and achieve as a society as well as the real costs of the provision of high-quality higher education.

iv. There is a limit to the extent to which universities can raise income from student fees and third-stream income (without possibly compromising the public- and social-good purposes of universities and institutional autonomy and academic freedom).

v. To support the effective functioning of universities, any funding framework must allocate funds among universities *consistently, predictably, optimally, transparently and equitably* in relation to core activities, negotiated missions, institutional size, geographic location, the academic needs of specific social groups of students and historical disadvantage.

vi. Wages of professionals are disproportionately high due to scarcity. Many sectors of the economy are importing highly skilled labour, while some sectors (such as health care) simply fail to deliver properly due to human resource shortages. Consequently, adequate resourcing is essential and must take high priority. It is hard to argue for more resources while such a high proportion of those allocated (to NSFAS and block grants) never achieve the desired results – so the inefficiency is compromising the ability of the sector to motivate for more funding. That is why it is so critical to get the incentives right. It would be ideal, however, if those parts or institutions that are working efficiently, and optimising current use of these resources, could be supported in doing more.

v. Recommendations

The Committee makes the following recommendations:

a) Government should increase spending levels on higher education. It is evident that expenditure on higher education is too low, especially in the light of the desire to move towards a knowledge economy. If participation rates of, in particular, African and coloured students need to be improved, more funding will have to be allocated to the public university system.

b) The DHET should monitor the actual cost of providing higher education to inform its bids to Treasury for funding allocations for the higher education sector.

5.6 Accountability

i. Introduction

The DHET is responsible for the distribution of a sizeable amount of government funding to universities (more than R23 billion in the 2012/13 funding year). The Committee expressed concern that the effectiveness, efficiency and outputs derived from this huge amount of funding were not being monitored appropriately. Taking cognisance of the administrative load of Departmental staff, it is essential that the capacity of the DHET be increased, to ensure that an appropriate structure is put in place to account for this spending. In particular, the effectiveness and efficiency of the principles and allocation formulas of the funding framework need to be monitored.

ii. Accountability and governance strengthened

The Committee furthermore expressed its concern about the number of universities that have been placed under administration in recent years. One of the universities has been placed under administration five times in recent years. This not only raises public concern about the efficiency of the university system but in general is bad for the system's reputation and credibility. The continued financial woes of under-developed universities are further cause for concern. It is acknowledged that this is not always attributable to inadequate funding levels, but that governance and poor management are also contributing factors in some instances. In addition to improved funding allocations to under-developed universities, the committee would like to recommend appropriate monitoring and support systems that would eventually turn this continuing poor state of affairs around.

The expenditure of public funds should occur within a paradigm of efficacy, efficiency, effectiveness and accountability. Meeting performance targets with fiduciary responsibility, coupled with clear consequences for non-performance, should be integral to the funding framework. Accountability should be associated with links between funding and the achievement of agreed outputs and outcomes. In addition, strong and sound institutional governance should be a key deliverable as part of a funding framework for transformation of the university system.

Currently, the allocation of funding and changes to the funding framework are recommended to the Minister by a few staff members within the DHET. This places an unfair burden of responsibility on the shoulders of Departmental officials, who are being held accountable for the expenditure by universities. Many changes to the funding framework were done without proper consultation with the CHE and the Minister of Finance as stipulated in the Higher Education Act (No. 101 of 1997). Chapter 5 of the Higher Education Act, which addresses the funding of higher education, states explicitly:

> The Minister must, after consulting the CHE and with the concurrence of the Minister of Finance, determine the policy on the funding of public higher education, which must include appropriate measures for the redress of past inequalities, and publish such policy by notice in the Gazette.

iii. Recommendations

The Committee makes the following recommendations:

a) The monitoring and evaluation capacity of the DHET with regard not only to the efficiency and effectiveness of the functioning of the funding framework but also to the financial health of universities should be improved. The DHET need to have an in-house capacity that can contract expertise in, as and when needed, to assist with monitoring and research. As mentioned in the previous section, it is of the utmost importance that the DHET monitor the *actual cost* of providing higher education.

b) A temporary unit should be created, similar to the merger unit, to develop and monitor strategies as well as to provide assistance with improving the development of the under-developed universities in the system.

c) The Minister should establish a Funding Committee, to oversee and monitor the funding allocations to universities on an annual basis.

The functions of the proposed committee would include the following:

- The Funding Committee would make recommendations to the Minister regarding the annual allocations to universities as well as regarding changes that are needed to give better effect to the transformational goals for the university system.
- The Funding Committee would provide the Minister with an annual report on the performance of the universities as well as the financial health of individual universities. The Funding Committee would make use of appropriate accounting practices to establish the financial health of universities and also recommend appropriate steps to be followed as a preventive strategy for having to place a university under administration.

- If and when changes were proposed to the funding framework the Funding Committee would model the financial impact for individual universities and provide the Minister with a report on the financial consequences for individual universities.
- The Funding Committee would report to the Minister on the effectiveness and impact of conditional grants and the successful implementation thereof.

The Ministerial Committee recommends that the proposed Funding Committee comprise the following:

- DHET representatives;
- Representatives of the HESA Funding Strategy Committee;
- National Treasury representatives;
- DST representatives;
- NRF representatives;
- FCC representatives;
- Technical data and funding framework expertise;
- Technical accounting expertise;
- Private sector expertise; and
- An economist.

The Funding Committee should be chaired by the DHET. Given that the final decisions with regard to the funding allocations lie with the Minister of Higher Education and Training, the aim of introducing this committee would be to prepare a report with recommendations to assist the Minister in making decisions. The capacity of the DHET with regard to evaluation and monitoring would need to be improved, to enable the DHET to provide the Funding Committee with the necessary information to make informed recommendations to the Minister. The Funding Committee would need to commence its work early enough in the funding cycle process to be able to provide its inputs in time for the annual Ministerial Statements.

d) The Ministerial Committee recommends that any future substantive changes to the funding framework follow the appropriate routes of consultation as indicated in Chapter 5 of the Higher Education Act (No. 101 of 1997) before any changes to the funding framework are effected.

5.7 Enrolment planning and over- and under-enrolment

i. Introduction

During various meetings in 2010 between the HESA Funding Strategy Group and DHET officials, the issue of over- and under-enrolment was raised due to the impact on the actual funding of teaching input units. This is also sometimes referred to as over- and under-funding of universities. The over-funding and under-funding of institutions is the result of deviations of universities from the agreed-upon enrolment targets.

The *Ministerial Statement on Student Enrolment Planning 2011/12–2013/*14 (MHET 2011b) reiterates that planning, funding and quality assurance will remain the three key steering instruments for achieving the policy goals for universities. Enrolment planning forms one of the key elements of the planning process, and has to dovetail with broader institutional strategic plans, national plans and the country's human resource development strategy. Enrolment planning and the resultant institutional targets play a vital role in the achievement of the Presidency's PME targets set for the Minister of Higher Education and Training, which focus on specific areas that must align with the DHET's strategic goals and objectives. Enrolment planning is also the instrument for steering the university system in terms of achieving the goals and targets set for it in both the Green Paper for Post-school Education and Training (DHET 2012d) and the *National Development Plan 2030* (NPC 2012).

Another important role that enrolment planning fulfils is to provide predictability in teaching input unit grant allocations, as well as the protection of the Rand value for a teaching input unit grant. The impact of deviation in the enrolment planning targets is considerable, taking into account that the teaching input grants constituted 67% of the total block grant to universities in the 2012/13 financial year – or 48% of all government allocations to universities in that financial year. Enrolment planning and the concurrent funding should also serve the purpose of preventing the university system from growing too rapidly without the necessary funding, to ensure a quality teaching and learning experience for students and to lead to the further strengthening of the efficiency of the system in terms of student success and throughput rates.

ii. Volume-of-activity increases and current MTEF allocations

During the five academic years 2000–04 student enrolments grew at levels that were financially unsustainable. Much of the growth was based on unjustified institutional assumptions that 'more students = more government subsidies'. Because the quality of teaching services at certain universities was affected by high student-growth rates, the then Minister of Education placed upper limits on the numbers of students who could be included in government funding calculations. These upper limits were designed to bring growth rates in enrolments into line with growth in government funding per student.

When the high growth rates in student enrolments began to decline after 2005, the then Minister of Education approved enrolment policies that were designed to include all enrolled students in subsidy funding calculations. These policies involved (a) the setting of agreed enrolment targets for each university for the academic year 2010, and (b) a reduction, over time, in the total of unfunded students.

The implementation of these policies requires higher education block grants to be linked to inflation and to the planned growth in the inputs and outputs of the higher education system. A composite of the key inputs of the higher education system (student enrolments) and of its outputs (graduates and research publications) represents the system's 'volume of activities'. The Minister of Education's target for the years 2008/09–2012/13 has been a weighted average annual increase of 4% in volumes of activity. The goal of no unfunded students would have been met only if the minimum annual increase in block grant funding was equivalent to inflation plus the Minister's approved increase in volumes of activity.

Following huge deviations in the originally agreed-upon targets for the 2010 enrolment year that determined the funding for the 2012/13 financial year, the DHET in 2011 decided to adjust the original shares of universities and already to migrate universities to their actual shares in the funding allocations for 2012/13. Despite these adjustments, the Minister could not fund all unfunded students in the system, due to the fact that the actual teaching input units were much more than the funded teaching input units. This was the result of two factors:

a) Huge differences between actual and funded teaching input units for some universities that are being migrated for full funding.

b) Further increases in teaching input units, which has widened the gap between actual and funded teaching input units.

iii Comparison of the projected versus actual TIU:FTE ratio

The ratio between FTEs and teaching input units (TIUs) is of great importance in determining the projected TIUs. This ratio is dependent on the mix of enrolments according to various fields of study, qualification type and mode of offering. On average, postgraduate enrolments have grown at higher rates than undergraduate enrolments, and enrolments in SET have grown at higher rates than in the other fields of study. This was in line with the DHET imperatives. The TIU:FTE ratios for most institutions have thus increased in general, leading to higher numbers of total TIUs. It appears that this shift, which resulted from the drive to grow postgraduate enrolments and enrolments in SET, was not taken into account originally in the projection of total TIUs for 2010; and as a result the targeted totals were under-estimated for most universities. Consequently the increase in the volume of activity has also been under-estimated.

Table 29 shows, per institution, the effect on the total TIUs if the actual 2008 TIU:FTE ratio is applied instead of the TIU:FTE ratio used for the projected targeted TIUs. It shows, for example, that if the actual 2008 TIU:FTE ratio is applied, the projected total TIUs for all universities for funding in 2010 (determined by 2008 data) should have been 1 015 327 – compared to the Ministerial target of 983 500. Similarly, if the actual 2008 TIU:FTE ratio is applied to estimate the 2012 (determined by the 2010 data) TIUs, a total of 1 104 329 is projected, compared to 1 071 000, which was the Ministerial target.

Although the issue of the projected versus actual TIU:FTE ratio was a contributing factor, the actual headcount enrolments in the system have been much higher than originally agreed upon with institutions, and over- and under-enrolment by institutions have played a major role in the current levels of over- and under-funding.

In the new targets set in the *Ministerial Statement on Student Enrolment Planning 2011/12–2013/14* (MHET 2011b), adjustments have been made to accommodate higher growth rates in fields with higher funding weights and for levels with higher weights, to ensure that more accurate projections can be made of TIUs, based on submitted enrolment plans in terms of headcounts and FTEs.

iv. Impact of over- and under-enrolments per university

The first and foremost problem that occurs in the majority of instances is over-enrolment. This means that a considerable number of TIUs in the system are not funded. If all actual TIUs are funded, it would drive down the Rand value per TIU. This could, in effect, mean that universities that stay within the enrolment targets are negatively affected by universities that enrol considerably more students than what was agreed upon in the enrolment planning exercise. Similarly, universities that under-enrol are funded for TIUs that they actually do not have. They are thus 'over-funded' compared to the other universities. Some universities have also adopted a practice of enrolling students for student fees knowing that they would not be subsidised for all the TIUs.

To manage enrolments precisely as agreed upon with the DHET is not always possible due to the following: the unpredictability of the National Senior Certificate (NSC) results from year to year, while the examinations are still stabilising; access to financial resources for students; and student choice. Various universities are also put under extreme pressure to enrol more students than planned for, especially in instances where the NSC results improve drastically for a particular year and where more students qualify for university entry. Universities also have to admit more students than they actually plan to enrol, due to the fact that a certain percentage of students do not show up for registration. University budgets are heavily dependent on student fee income, and universities have to reach their enrolment targets to be able to sustain the income streams for the realisation of their budgets. The additional number of students admitted is normally based on a factor calculated from the average take-up rate of the previous three years per programme. One of the reasons that students do not actually show up for registration is because their final examination results exclude them from registration. If there is a sudden improvement in results, more of the students admitted actually come and register and this contributes to over-enrolments. Additional financial resources as well as other forms of incentives such as bursaries for students in scarce fields can also contribute to higher-than-planned enrolments.

Table 29: Comparisons of the effect of the actual versus the projected TIU:FTE ratio on the approved TIUs

	Actual 2008 TIU	TIU share of 2008 actual (%)	2008 TIU approved for funding 2010/11	Difference	TIU share of 2008 funded (%)	2010 TIU approved for funding 2012/13	Ratio TIU:FTE 2010 approved	TIU share for 2012/13 (%)	Ratio TIU:FTE 2008 actual	2008 TIU if the actual TIU:FTE ratio were applied	(Approved actual) based on 2008 TIU:FTE (2010)	Approved 2012 TIU based on actual 2008 TIU:FTE	Share based on actual 2008 TIU:FTE shares (%)
CPUT	49 700	4.82	46 500	-3 200	4.73	52 000	2.11	4.86	2.28	50 246	546	56 190	5.09
UCT	49 700	4.83	52 000	2 300	5.29	56 000	2.76	5.23	2.81	52 942	3 242	57 014	5.16
CUT	17 500	1.69	15 700	-1 800	1.60	17 200	1.96	1.61	2.10	16 821	-679	18 429	1.67
DUT	35 300	3.43	35 200	-100	3.58	35 900	2.09	3.35	2.18	36 716	1 416	37 446	3.39
UFH	15 300	1.48	12 100	-3 200	1.23	13 100	1.58	1.22	2.02	15 470	170	16 748	1.52
UFS	46 000	4.47	43 900	-2 100	4.46	47 800	2.34	4.46	2.40	45 026	-974	49 026	4.44
UJ	71 700	6.96	66 500	-5 200	6.76	71 300	2.14	6.66	2.12	65 879	-5 821	70 634	6.40
UKZN	69 100	6.71	78 300	9 200	7.96	87 100	2.50	8.13	2.53	79 240	10 140	88 145	7.98
UL	35 200	3.42	34 500	-700	3.51	38 500	2.73	3.59	2.65	33 489	-1 711	37 372	3.38
MUT	13 600	1.32	13 000	-600	1.32	15 100	1.86	1.41	1.99	13 909	309	16 155	1.46
NMMU	34 400	3.34	35 800	1 400	3.64	39 300	1.98	3.67	2.12	38 331	3 931	42 079	3.81
NWU	53 200	5.17	54 300	1 100	5.52	60 000	2.03	5.60	1.69	45 205	-7 995	49 951	4.52
UP	88 500	8.60	90 300	1 800	9.18	99 000	2.53	9.24	2.43	86 731	-1 769	95 087	8.61
RU	12 900	1.25	12 000	-900	1.22	13 200	2.40	1.23	2.42	12 100	-800	13 310	1.21
UNISA	109 500	10.63	92 100	-17 400	9.36	102 100	0.79	9.53	0.82	95 597	-13 903	105 977	9.60
SU	57 900	5.62	50 000	-7 900	5.09	54 000	2.86	5.04	2.96	51 748	-6 152	55 888	5.06
TUT	78 400	7.62	74 200	-4 200	7.55	75 100	1.67	7.01	1.97	87 529	9 129	88 591	8.02
VUT	25 700	2.50	24 800	-900	2.52	26 300	1.73	2.46	2.10	30 104	4 404	31 925	2.89
Univen	20 300	1.97	14 200	-6 100	1.45	16 200	1.98	1.51	2.07	14 845	-5 455	16 936	1.53
WSU	41 300	4.01	32 500	-8 800	3.31	36 300	1.74	3.39	1.85	34 555	-6 745	38 595	3.49
UWC	30 100	2.92	29 900	-200	3.04	33 200	2.32	3.10	2.57	33 122	3 022	36 778	3.33
Wits	58 700	5.69	59 800	1 100	6.08	63 700	3.00	5.95	3.13	62 391	3 691	66 460	6.02
UZ	16 100	1.57	15 900	-200	1.62	18 600	1.98	1.73	1.66	13 330	-2 770	15 594	1.41
Total	**1 030 100**		**983 500**	-46 600	**100.00**	**1 071 000**	**1.89**	**99.98**	**1.91**	**1 015 327**	-14 773	**1 104 329**	100.00

Sources: DoE (2007a); MoE (2009a)

There was also an instance where the DHET (or the former DoE) requested and financially supported universities to expand their enrolments in certain fields such as engineering, but did not adjust the enrolment of those universities earmarked for the initiatives.

v. Extent of over- and under-enrolment/over- and under-funding for the 2011 and 2012 funding years (based on 2009 and 2010 HEMIS data)

Tables 30 and 31 (below) provide an overview of the extent of over- and under-funding for the financial years 2011/12 and 2012/13 respectively. As shown in Table 30, in 2011/12 a total of 1 027 326 TIUs were funded, compared to the actual TIUs, which were 1 093 337. A total of 88 342 TIUs in 2010 (funded in 2012/13 – see Table 31) were thus not funded, which left a shortfall of R915 million at a lower teaching input Rand value per actual TIU (R10 361) for the 2012/13 financial year. Instead of having at least an inflationary increase, the Rand value in fact dropped from R10 619 in 2011/12 to R10 361 in 2012/13 for actual TIUs, in an attempt by the DHET to fund a larger portion of unfunded TIUs. Ideally, at least an inflationary adjustment should have been made to the TIU Rand value per unit based on the 2011/12 financial year. The funding available for the teaching input grant in 2012/13 was R11 658 601 000. If all the actual TIUs were to be funded with at least an inflation-adjusted teaching input Rand value (R11 150), an amount of R12 935 850 900 would be needed. In the 2012/13 financial year there was thus already a shortfall of R1 277 249 900. If an inflationary adjustment of 5% is added for the subsequent three funding years, the following additional amounts would be needed to adequately fund the current enrolled TIUs for the next three financial years:

- **2013/14:** R1 341 112 395.
- **2014/15:** R1 408 168 015.
- **2015/16:** R1 478 576 415.

Table 30: Extent of over- and under-funding for the 2011/12 funding year (based on the 2009 HEMIS data)

Institution code	Institution name	2009 actual TIU	2009 funded TIU	Difference	Difference (%)	Rand value of difference based on allocation unit amount
H01	CPUT	51 854	49 268	2 586	5.0	R27 458 921
H02	UCT	54 332	54 003	329	0.6	R3 492 277
H03	CUT	19 985	16 449	3 536	17.7	R37 553 763
H04	DUT	38 129	35 558	2 571	6.7	R27 301 322
H05	UFH	17 366	12 619	4 747	27.3	R50 412 888
H06	UFS	48 180	45 841	2 339	4.9	R24 836 690
H07	UJ	80 629	68 903	11 726	14.5	R124 519 321
H08	UKZN	71 537	82 695	-11 158	-15.6	-R118 483 143
H09	UL	38 706	36 508	2 198	5.7	R23 336 771
H25	MUT	14 512	14 046	466	3.2	R4 953 493
H10	NMMU	37 456	37 543	-87	-0.2	-R924 051
H11	NWU	55 586	57 139	-1 554	-2.8	-R16 499 391
H12	UP	94 784	94 639	145	0.2	R1 543 767
H13	RU	14 399	12 623	1 776	12.3	R18 858 585
H14	UNISA	109 444	97 081	12 363	11.3	R131 283 519
H15	SU	61 866	52 011	9 855	15.9	R104 646 090
H16	TUT	80 549	74 663	5 885	7.3	R62 497 784
H18	VUT	31 016	25 555	5 461	17.6	R57 991 823
H17	Univen	20 845	15 218	5 627	27.0	R59 751 754
H19	WSU	39 055	34 415	4 640	11.9	R49 271 909
H20	UWC	30 684	31 565	-880	-2.9	-R9 347 096
H21	Wits	63 054	61 745	1 309	2.1	R13 903 426
H22	UZ	19 371	17 241	2 130	11.0	R22 613 388
Total		**1 093 337**	**1 027 326**	**66 011**	**6.0**	**R700 973 810**

Sources: DoE (2007a); MHET (2010)

Note: Rand value of TIU in 2011 = R10 619.

Tables 30 and 31 show the extent of over- and under-funding for the funding years 2011/12 and 2012/13 respectively. Positive values indicate the unfunded TIUs, while negative values indicate the over-funded TIUs.

Table 31: Extent of over- and under-funding for the 2012/13 funding year (based on the 2010 HEMIS data)

Institution name	2010 actual TIU	2010 funded TIU	Difference	Difference (%)	Rand value of difference based on allocation unit amount	Rand value of difference based on allocation unit amount plus 5% inflation
CPUT	55 692	51 118	4 574	8.2	R47 390 199	R50 998 779
UCT	56 562	55 002	1 560	2.8	R16 161 482	R17 392 116
CUT	19 997	16 882	3 115	15.6	R32 269 759	R34 726 976
DUT	41 929	36 692	5 237	12.5	R54 259 283	R58 390 917
UFH	18 765	13 692	5 073	27.0	R52 565 042	R56 567 666
UFS	51 936	48 941	2 995	5.8	R31 026 191	R33 388 715
UJ	77 997	71 412	6 585	8.4	R68 226 139	R73 421 295
UKZN	74 897	81 977	-7 080	-9.5	-R73 360 926	-R78 947 076
UL	45 127	39 872	5 255	11.6	R54 446 278	R58 592 151
MUT	14 684	14 227	457	3.1	R4 735 008	R5 095 561
NMMU	40 884	38 944	1 940	4.7	R20 104 785	R21 635 686
NWU	63 045	60 774	2 271	3.6	R23 528 163	R25 319 741
UP	98 889	95 943	2 946	3.0	R30 524 988	R32 849 347
RU	15 197	13 278	1 919	12.6	R19 879 122	R21 392 840
UNISA	124 407	104 131	20 276	16.3	R210 078 113	R226 074 747
SU	68 121	55 161	12 960	19.0	R134 278 073	R144 502 828
TUT	75 962	78 768	-2 806	-3.7	-R29 077 204	-R31 291 320
VUT	33 386	27 256	6 130	18.4	R63 508 174	R68 344 076
Univen	19 461	16 814	2 647	13.6	R27 428 727	R29 517 318
WSU	41 394	36 383	5 011	12.1	R51 922 514	R55 876 213
UWC	36 842	33 420	3 422	9.3	R35 456 254	R38 156 110
Wits	63 427	62 647	780	1.2	R8 082 958	R8 698 444
UZ	21 567	18 490	3 077	14.3	R31 876 746	R34 304 037
Total	**1 160 166**	**1 071 824**	**88 342**	**7.6**	**R915 309 866**	**R985 007 166**

Sources: DoE (2007a); MHET (2010)

Note: Rand value of actual TIU = R10 361; Rand value of a TIU with 5% inflation value added = R11 150.

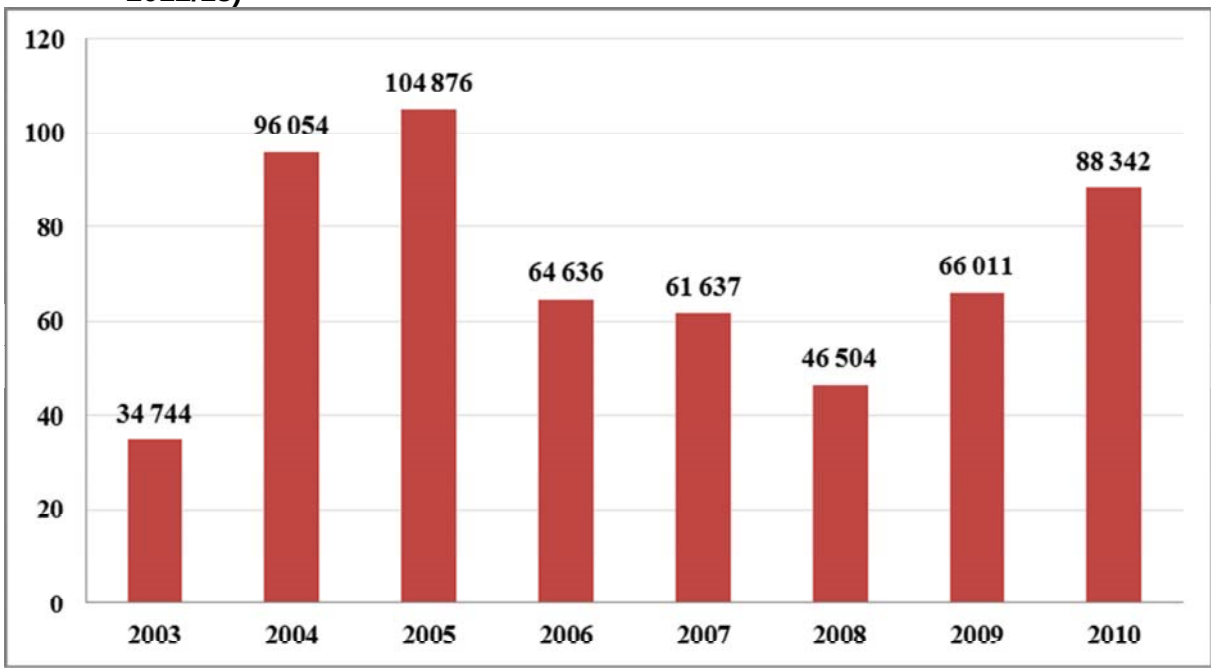
Table 32: Unfunded and over-funded TIUs, by university and year (2002–10)

	(Actual TIUs minus funded TIUs) x 1 000							
University	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
CPUT	2.3	5.4	7.5	6.0	3.7	3.1	2.6	4.6
UCT	0.0	2.2	3.9	0.0	-1.6	-2.3	0.3	1.6
CUT	1.0	4.3	2.4	1.8	1.8	1.8	3.5	3.1
DUT	0.0	1.6	1.9	1.5	1.2	0.1	2.6	5.2
UFH	0.2	1.1	1.2	0.0	3.0	3.1	4.7	5.1
UFS	0.9	6.0	4.8	3.0	1.9	2.2	2.3	3.0
UJ	3.8	12.0	10.5	5.1	0.5	5.2	11.7	6.6
UKZN	4.0	9.3	10.9	1.4	-3.5	-9.2	-11.2	-7.1
UL	2.7	5.9	8.2	3.2	2.8	0.7	2.2	5.3
MUT	1.9	4.5	4.5	3.8	1.7	0.6	0.5	0.5
NMMU	0.2	2.8	2.0	1.2	0.1	-1.4	-0.1	1.9
NWU	3.5	6.7	7.9	6.4	3.6	-1.1	-1.6	2.3
UP	0.1	3.3	3.0	3.6	1.8	-1.7	0.1	2.9
RU	0.0	1.0	1.6	1.2	1.4	0.9	1.8	1.9
UNISA	0.4	2.8	4.2	7.9	8.8	17.4	12.4	20.3
SU	0.0	3.2	5.3	4.7	6.4	7.9	9.9	13.0
TUT	3.3	7.4	2.7	-3.6	12.7	4.2	5.9	-2.8
VUT	0.0	2.5	4.9	2.5	0.6	0.9	5.5	6.1
Univen	2.4	0.6	3.5	5.3	7.9	6.1	5.6	2.6
WSU	3.9	8.3	9.5	7.6	7.9	8.8	4.6	5.0
UWC	0.7	0.5	1.8	1.1	1.9	0.1	-0.9	3.4
Wits	1.6	1.9	-1.0	-0.6	-1.9	-1.1	1.3	0.8
UZ	1.8	2.8	3.6	1.7	-1.2	0.2	2.1	3.1
Total	**34.7**	**96.1**	**104.9**	**64.6**	**61.6**	**46.5**	**66.0**	**88.3**

Source: DHET (2012g)

Table 32 provides data per institution on unfunded and over-funded TIUs for the period 2002–10, while Figure 11 (below) shows how the unfunded TIUs spiralled out of control over the 2004–06 enrolment period, for funding in 2006/07 and 2007/08. The figures were managed down by 2008 but by the enrolment year 2010 they had already once again shown a huge increase. It has been a problem prior to and during the implementation of the current funding framework.

Figure 11: Unfunded TIUs for the academic years 2003–10 (funding years 2005/06–2012/13)



Source: DHET (2012g)

vi. Important issues to consider

A balance needs to be achieved between limited financial resources, on the one hand, and responding to pressure for increased participation rates and enrolments, on the other. Furthermore, the actual teaching input shares need to be adjusted to align with the available funding, to ensure financial stability in the system. Teaching and learning quality must not be compromised for the sake of increased participation rates and the widening of access in the absence of sufficient funding allocations.

The *Report of the Ministerial Committee for the Review of the Provision of Student Housing at South African Universities, September 2011* (DHET 2011a) confirms that there are major backlogs in the provision of student accommodation, and that in some instances students are living in appalling conditions. The report mentions that research evidence suggests that being housed in a safe, well-managed residence is both socially and academically beneficial for students, particularly those from poor backgrounds. Currently, only 20% of residential university students are accommodated in student housing. That Committee recommended that residence bed capacities should accommodate 80% of full-time contact student enrolment on campuses where off-campus accommodation is unsuitable and/or unavailable,

and 50% of full-time contact student enrolment on campuses where limited suitable off-campus accommodation is available. By 2013, there would already be a shortage of 207 800 beds. The implications are that further rapid growth in the higher education system without addressing the dire need for student accommodation would exacerbate the problem.

Although it seems evident that under-enrolments and consequent over-funding at a cost to other institutions cannot be easily justified, over-enrolments could equally impact negatively on other institutions, should shares be adjusted quite rapidly to fund all over-enrolments. This would lead to the further deterioration of the Rand value of TIUs. The DHET will annually have to make recommendations to the Minister regarding the degree to which, as well as in which instances, shares should be adjusted to fund unfunded students, and at what pace this should be done.

Given unforeseen impacts on the system – including, for example, the first cohort of NSC students entering universities (from 2009 onwards) – it seems the DHET should rather move to a practice of rolling enrolment plans for universities, which would also facilitate more frequent adjustments of teaching input shares. This would be helpful especially in cases of under-enrolment. Considering available funding, the DHET would not necessarily be able to fund significant over-enrolments. These proposed rolling enrolment plans with adjusted targets would have to be approved by the DHET in relation to available funding.

It is important to maintain an inflationary adjustment to the Rand value of a TIU. On the one hand, funding all over-enrolments could jeopardise this goal; but, on the other hand, there is an expectation of continued growth in the system, especially given the large numbers of 18- to 24-year-olds that qualify for university entrance but are neither studying nor working. Economic growth is dependent on the development of high-level skills by universities. High failure rates in universities lead to repeaters taking up a huge proportion of spaces in the institutions, limiting the capacity of universities to enrol new entrants into higher education. It would thus seem that there should be a link between the performance indicators of a university and the growth allowed within the enrolment plan. This also links to the quality of teaching offered to the students.

vii. Recommendations

The Committee makes the following recommendations:

a) The DHET should annually compile data on the increases of the volume of activity in higher education in terms of growth in enrolments, graduates and research outputs, and make a calculation of the additional funding needed, taking higher education inflation into account, for submission to Treasury – in a bid to fully fund the increase in volume of activity and to eradicate the phenomenon of unfunded students and outputs in the system. Improvements in performance with an emphasis on improvements in outputs should form part of this bid. This bid should include arguments focusing on the desirability of an increased participation rate in higher education, given a knowledge economy, as well as arguments centring on the decline in government funding, rising student fees and the comparable low expenditure on higher education in South Africa.

b) Enrolment planning must remain as a key steering instrument for determining the size and shape of the higher education sector, and the institutionally negotiated targets must be linked to the funding of the universities. The practice of funding universities based on a share that is reviewed from time to time should remain, although some changes to the current practice will be proposed. The role of enrolment planning must also include the protection of the unit Rand value of a TIU.

c) TIUs – and not headcounts – should be used as the basis for the determination of deviations from approved enrolment plans, since headcounts could be misleading. If an institution enrols more postgraduate students or students in SET – which is desirable for attaining the national goals – and enrols fewer students at undergraduate level but remains close to its approved TIUs, the university should not be penalised.

d) The institutional share of the teaching input grant must be determined on the basis of three-year approved rolling enrolment plans, resulting in projected TIUs based on historical ratios between FTEs and TIUs per major field of study and qualification level. Based on the trends in actual TIUs and approved TIUs, the approved TIUs of the third year of the enrolment plan should be adjusted with a migration strategy. The projections of TIUs must incorporate the effect of projected growth rates in the various fields of study as well as differentiated growth rates at various qualification levels, to

ensure that the generation of more TIUs as a result of higher funding and level weights is acknowledged and projected as accurately as possible. If changes in the CESM categorisation occur, the impact on TIUs needs to be taken into account.

e) Changes in teaching input shares should be done with a migration over a period of at least two, or at the most three, years, to ensure financial predictability for a minimum of two years.

f) Universities that over-enrol considerably should not grow any further but rather maintain their enrolments to enable the DHET to move to the full funding of all their enrolments before any further growth in enrolments for such universities is allowed.

g) The agreed-upon TIU targets should be based on an overview of the performance of an institution in terms of outputs; and in instances of poor success and throughput rates, growth should be limited, to ensure that these universities pay more attention to student success than to growth.

h) Growth in the higher education system should be aligned with institutional capacity and available human and fiscal capacity as well as available infrastructure, student accommodation and equipment.

6. Historically Disadvantaged Institutions

i. Introduction

One of the many undesirable legacies of apartheid is entrenched inequalities within the higher education system. Almost two decades after apartheid's collapse the country's higher education system is still characterised by two sets of institutions: historically advantaged institutions (HAIs) and historically disadvantaged institutions (HDIs). As is well known, the majority of HDIs find themselves trapped in a state of under-development and continued financial difficulties compared to their historically advantaged counterparts. The state of under-development of HDIs has, among other things, obviated these institutions from effectively pursuing their missions and establishing themselves as vibrant academic enterprises. The continued state of under-development of HDIs is not tenable and should not be allowed to persist indefinitely. If all South African universities must offer high-quality programmes, and for the higher education system as a whole to be able to meet the developmental needs of the country, the under-development that confronts most HDIs must be remedied.

The Committee identified the following seven universities as historically disadvantaged:

a) University of Fort Hare.
b) University of Limpopo.
c) Mangosuthu University of Technology.
d) University of Venda.
e) University of the Western Cape.
f) Walter Sisulu University.
g) University of Zululand.

These seven are mainly those HDIs that were either unaffected by the merger process or resulted from the merger of other HDIs (e.g. in the cases of Walter Sisulu University, and the University of Limpopo, respectively). It should also be pointed out that following the process of mergers and incorporations, some HDIs or campuses of HDIs became part of HAIs. Consequently, a number of HAIs have what may be described as historically

disadvantaged sites or campuses. The universities with historically disadvantaged sites or campuses are as follows:

a) Central University of Technology (Welkom).
b) Durban University of Technology (ML Sultan).
c) University of Johannesburg (Soweto).
d) University of KwaZulu-Natal (Westville).
e) Nelson Mandela Metropolitan University (Missionvale).
f) University of Free State (QwaQwa).
g) North West University (Mafikeng).
h) University of Pretoria (Mamelodi).
i) Tshwane University of Technology (Soshanguve and Ga-Rankuwa).
j) Central University of Technology (Welkom).
k) Vaal University of Technology (Sebokeng).
l) University of South Africa (East Rand).

The primary focus of this section of the report is the seven identified HDIs. An attempt is made to map the key variables or features that are useful in accounting for HDIs' resource needs. These key variables provide insights into the key challenges confronting HDIs and inform the recommendations made at the end of the section.

The following key features of HDIs are discussed, with the intention of accounting for some of the resource challenges facing HDIs and informing possible interventions:

a) Historical context (including apartheid-era funding approaches).
b) Geographic location.
c) Student characteristics.
d) Financial health.
e) Infrastructure development.
f) Governance/management issues.

ii. Brief historical context

The majority of HDIs were established following the enactment of the Extension of University Education Act (No. 45 of 1959), which established separate institutions of higher learning for the country's non-white communities. These institutions were established both in the 'homelands' (e.g. University of Transkei, University of Bophuthatswana and University of

Venda) and in the then 'Republic of South Africa' (e.g. Medical University of Southern Africa – MEDUNSA, University of the North, University of Zululand, University of Durban-Westville and University of the Western Cape). Following the higher education reforms that commenced after the collapse of apartheid in 1994, several of these universities were merged, resulting in new entities such as Walter Sisulu University (a product of the merger of Border Technikon, Eastern Cape Technikon and University of Transkei) and University of Limpopo (merged MEDUNSA and University of the North).

With the exception of the University of the Western Cape and the then University of Durban-Westville, all of the other HDIs were established in geographically remote areas, which, as will be discussed later, has had huge implications for the viability of these institutions. The University of the Western Cape, although established in an urban area, is marooned in an industrial area with limited access to facilities, especially for co-curricular activities for students and staff.

As would be expected, the foundation of black universities on apartheid ideology, which promoted inequalities across racial groups, meant that these institutions also reflected the inequalities of the broader society. By the end of apartheid, HDIs exhibited the following characteristics: they were located in isolated rural or urban peripheries (they still are), they had poorly developed educational facilities and stunted infrastructural and administrative capacity, they offered a narrow range of academic programmes clustered in non-science and teaching-related fields at lower qualification levels, and they drew the majority of their students from disadvantaged backgrounds (Barnes 2003).

a) Apartheid-era funding of HDIs

Apartheid-era funding of higher education was characterised by two broad approaches: negotiated budgets for HDIs and technikons, and formula funding associated initially with (white) HAIs (Bunting 2006). As expected, HDIs did not have the kind of autonomy enjoyed by HAIs in the manner in which they spent government subventions, and decisions regarding what their tuition fees should be. Their tuition fees and the details of their expenditure had to be approved by the government (Bunting 2006).

The system of negotiated budgets involved the university or technikon concerned submitting a 'needs' budget for expenditure and partial income to its controlling government department. The income side was the amount the institution expected to collect from student fees. The final amount that the institution was permitted to spend in that financial year would have been a net amount of approved expenditure less student fees (Bunting 2006). The expenditure budgets finally approved were not determined by the student enrolments of the institution concerned but on the basis of assessments of current needs in the context of historical expenditure patterns. In many cases "this amounted to adding a percentage to the allocation for the previous year, and did not overcome disparities with the more advantaged institutions or ensure adequate library, laboratory and computer facilities" (Bunting 2006: 74). Expenditure by the institutions had to be strictly managed in terms of this budget, and any unspent balances on a negotiated budget would have to be returned to the national treasury. Furthermore, institutions were not permitted to transfer these amounts to reserves under their control, which had two consequences: unrestricted spending at the end of every year to discharge accumulated funds, and no build-up of a reserve fund (Bunting 2006; CHE 2004c).

In 1982 the apartheid government started allocating subsidies and other financial resources to universities and technikons through the South African Post-secondary Education (SAPSE) based formula funding. This formula was initially developed for HAIs. The overall amounts available for higher education were allocated to institutions in terms of a formula that contained – as input variables – FTE student enrolments, and – as output variables – student success rates and research publications (CHE 2004c). Contrary to the case for HDIs and technikons, however, these amounts could be spent at the discretion of the council of the higher education institution, and unspent balances could be retained.

Although the funding formula was originally intended for HAIs, by 1988 the formula was applied to all universities and technikons. On the whole the formula had the effect of generating and perpetuating institutional inequities such that larger amounts of subsidy were available to HAIs because they "had larger numbers of natural science enrolments, produced better student success rates, had more postgraduate students, produced more research outputs, and had better management capacities" (CHE 2004c: 190).

One analysis argues that the SAPSE funding formula satisfied several principles of higher education funding: the principles of effectiveness, efficiency and sustainability, and the principle of shared costs (Bunting 2006). The analysis further contends that the formula

directed government funding of higher education at ensuring that the system achieved its pre-determined goals at the lowest possible cost; that through the a-factors, the funding mechanism made sure that the system was affordable. The formula also maintained the tradition of shared costs in South Africa's higher education (Bunting 2006). However, an analysis by the CHE (2004c) puts it differently:

> …the formula encouraged growth which was not financially sustainable – especially as student enrolments increased from the mid-1980s – and which was not linked to issues of quality. […], the a-factors introduced to contain the effects of growth created a climate of financial uncertainty for HEIs [Higher Education Institutions], acting as disincentives to creative planning at institutional level and as incentives to expanding cash reserves, or devising strategies of cross-subsidisation, including distance learning activities. Finally, the formula encouraged larger numbers of cheaper enrolments in humanities, rather than in the more costly natural sciences. (CHE 2004c: 190)

One issue on which the various analyses of the SAPSE funding formula converge is the question of equity and redress. Bunting, perhaps, captures the general consensus when he argues that the SAPSE funding formula "explicitly rejected the principles of equity and redress, holding that it was not the business of the higher education system to deal with social inequalities which affected either individuals or institutions" (2006: 84). The issue of equity and redress is revisited in the next section, which maps some of the key features of HDIs, especially with regard to the socio-economic backgrounds of the majority of students attending those institutions.

b) Key features of HDIs in the post-apartheid era

Despite important differences between them, HDIs share general characteristics, several of which are discussed below.

i. Geographic location

As already mentioned, most HDIs are located in isolated and poor rural areas as exemplified by the following illustrations. The HEQC audit report on Walter Sisulu University describes the university as straddling "the rural and peri-urban divides of the Eastern Cape, which are characterised by widespread poverty, illiteracy, unemployment and poor access to basic

services. Students are drawn largely from this catchment area" (CHE 2011b: 8). The University of Fort Hare, another HDI, "is located in the Amathole District Municipality of the Eastern Cape Province, one of the most economically deprived provinces in South Africa" (CHE 2009a: 7). The University of Venda is located 450 km away from the nearest major metropole, in a province where about 76% of the economically active population is qualified to do unskilled and semi-skilled labour, with only 3.5% being highly skilled.[11]

As mentioned in several submissions to the Committee, the isolated and deprived geographic location of most HDIs has several implications, including higher costs for procuring supplies and services, inability to attract and retain good-quality staff and students, and insufficient municipal services (e.g. water and power). The report of the HEQC audit of the University of Venda states that "lack of water and electricity are constant features of campus life as the municipal water supply is turned off at noon daily" (CHE 2011c: 11). The challenge of inadequate water, electricity and other municipal services, as captured in the University of Venda audit report and which also applies to several other HDIs, "not only creates unhealthy conditions and presents other serious risks on campus, but also conspires against the creation of a space conducive to the development of academic life" (CHE 2011c: 11). The challenges also mean that some of these universities are driven to incur extra costs to mitigate the inadequate supply of municipal services; for example, investing in generators for electricity supply, and/or investing in fire engines and ambulances.

In addition, as pointed out by Subotzky (1999), the deprived and isolated locations create a number of barriers: to academic networking and inter-institutional co-operation; and to links and consultancy work with government, NGOs and the private sector. The possibilities for generating third-stream income by HDIs are also constrained by their location in these isolated areas with deprived local economies (Wangenge-Ouma 2011).

[11] Presentation to the funding review committee on the University of Venda's submission regarding the new funding formula, 15 November 2011, CHE offices, Pretoria (Dr JJ Zaaiman, Ms N Dhumazi and Prof. J Crafford).

ii. Student characteristics

The majority of students enrolled at HDIs are black – that is, African and coloured (see Table 33, below) – and mostly come from disadvantaged socio-economic backgrounds. In addition, these students generally attend poor-performing schools, which leaves them poorly prepared for university education.

Table 33: HDI student enrolments, by percentage of black students (2010)

HDI	Black students (%)
UFH	96
UL	98
MUT	100
Univen	100
WSU	99
UWC	89
UZ	99

Source: DHET (2012e)

The characteristics of students at HDIs have three key implications:

- Considering that a large number of students who enrol in HDIs come from poor-quality schooling backgrounds, they require extra support to succeed in their studies. As pointed out in the recent NSFAS review report (DHET 2010a) and reiterated in the submissions to the Committee, the current funding framework does not sufficiently resource HDIs to adequately provide for their large pool of poorly prepared students.

- Given the economically disadvantaged nature of the majority of HDI students, these institutions maintain fees at low levels to allow access and participation (a fact that was highlighted in many of the submissions to the Committee), which translates to much lower fee income per capita. Related to this is the challenge of high student debt. The combination of low tuition fees and high student debt means that tuition fees are not a

viable source of income for HDIs – yet, as already pointed out, their location in deprived and isolated areas makes the possibility of generating third-stream income slim.

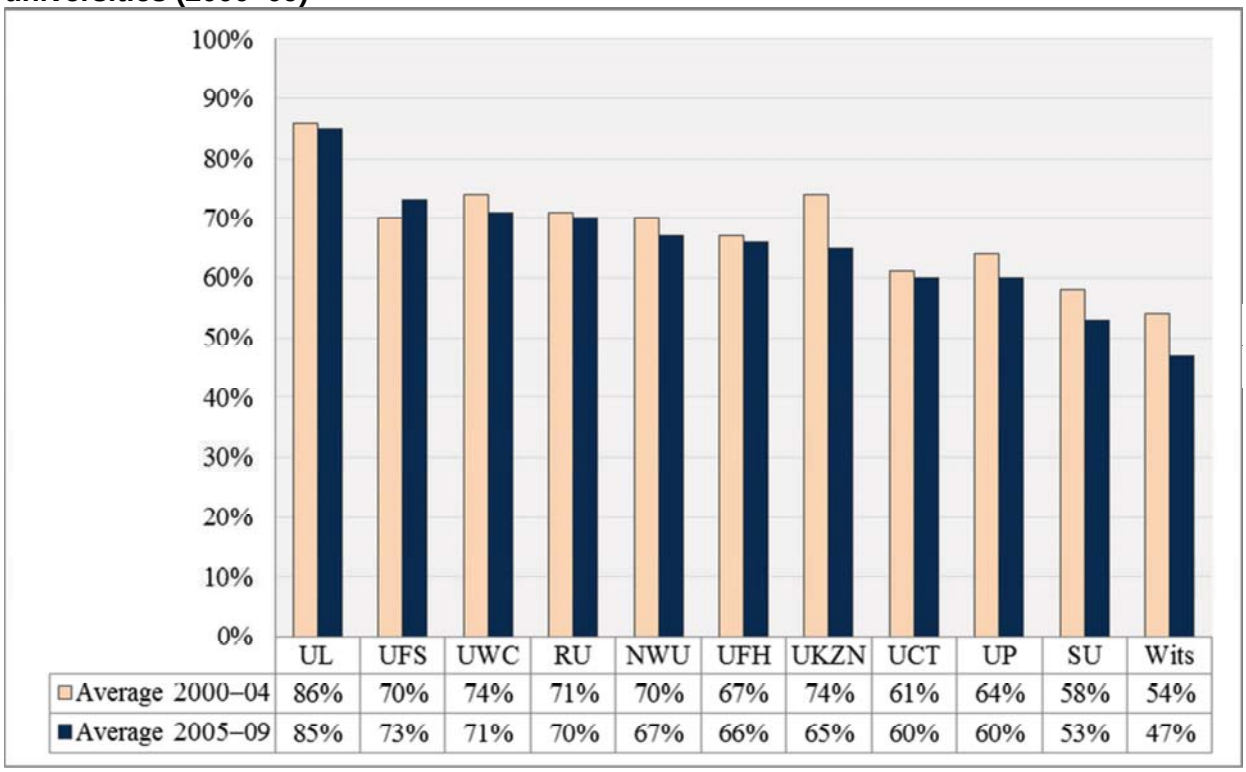
- The race-based formula used by NSFAS to allocate financial aid responds inadequately to the needs of students in HDIs, the majority of whom require significant financial support. The allocation mechanism does not consider the actual socio-economic needs of students, with the result that the majority of students requiring funding either do not receive financial aid at all or receive significantly inadequate financial aid (DHET 2010a). The NSFAS review report further indicates that as a result of insufficient NSFAS support and simultaneous efforts by institutions to increase access by black students, institutional debt had ballooned to R2.7 billion by 2009 (DHET 2010a: xv).

Overall, the key student constituency of HDIs comprises mainly poor and under-prepared students. However, resources available to HDIs do not seem to be sufficient for adequately addressing the magnitude of the challenge. It is therefore important that the HDIs' critical role of improving the educational position of the most educationally disadvantaged South Africans be adequately supported. It should, however, be pointed out that the geographic location of HDIs need not "become a permanent liability to the institutions and could be transformed in ways that make it an attractive option for financially well-off and academically good students" (Habib 2001: 12). There are many cases of prestigious institutions across the world, located in rural settings, that attract both academically and financially well-off students (Habib 2001). The vibrancy of the academic project seems to be a key factor in attracting both well-prepared and financially well-off students.

iii. Financial health

The HESA presentation to the Committee provides crucial insights into the financial health of universities. The presentation uses several indicators to describe the financial health of individual institutions. These indicators include income and expenditure of individual universities, sources of income of individual universities, and private income as a percentage of total income. Regarding the first indicator (income and expenditure of individual universities), not a single HDI consistently registered surpluses in the 10-year period 2000–09. Three HDIs had deficits in five or more than five of the 10 years.

Figure 12: Government grants and student fees, as a percentage of total income of universities (2000–09)



	UL	UFS	UWC	RU	NWU	UFH	UKZN	UCT	UP	SU	Wits
Average 2000–04	86%	70%	74%	71%	70%	67%	74%	61%	64%	58%	54%
Average 2005–09	85%	73%	71%	70%	67%	66%	65%	60%	60%	53%	47%

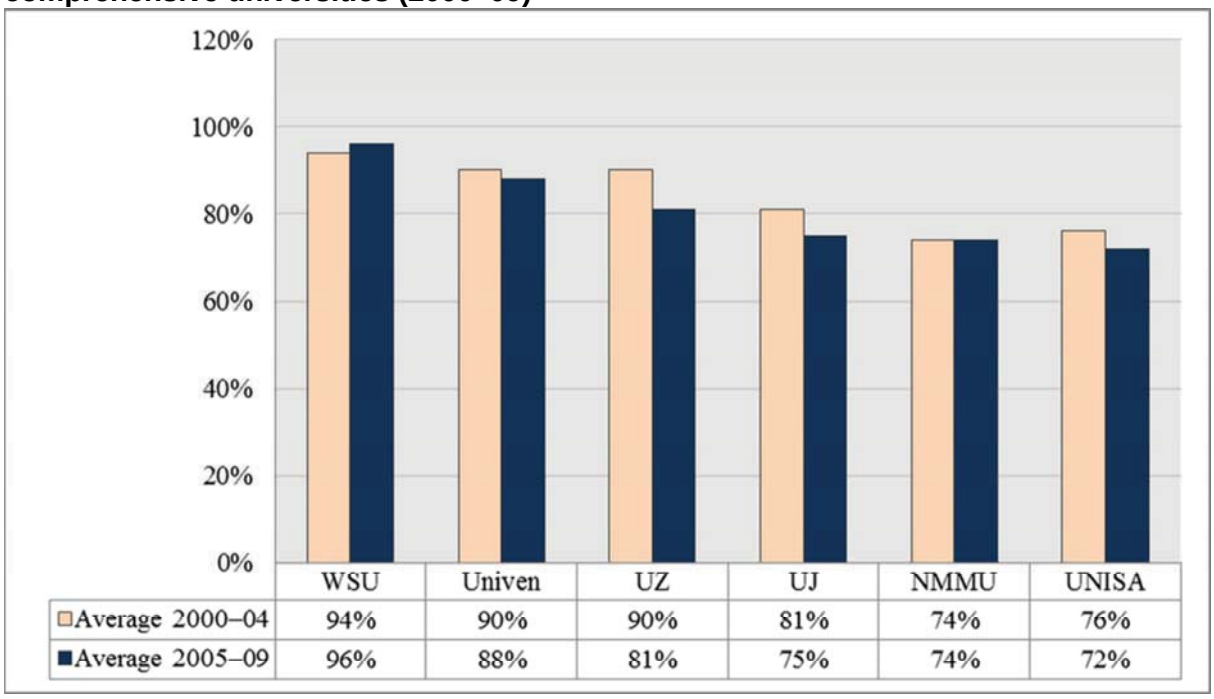
Source: HESA (2011b: 14)

Out of the six years for which data is provided for Walter Sisulu University, the university registered deficits in four years (HESA 2011b: 12). The multiple cases of deficits registered by all the HDIs suggest that the institutions' financial health may not be strong. However, this phenomenon is not unique to HDIs, as universities such as the University of the Witwatersrand and Nelson Mandela Metropolitan University, which are regarded as historically advantaged, also registered multiple deficits in the 10-year period (HESA 2011b: 11,12).

As far as sources of income of individual universities are concerned, all HDIs, with the exception of University of Fort Hare, exhibit a very high dependence on government funding and tuition fees. This is illustrated in Figures 12–14.

Lastly, the HESA report presents data on the contribution of private income (third-stream income) to the total income of universities. This is presented in Figure 15 (below).

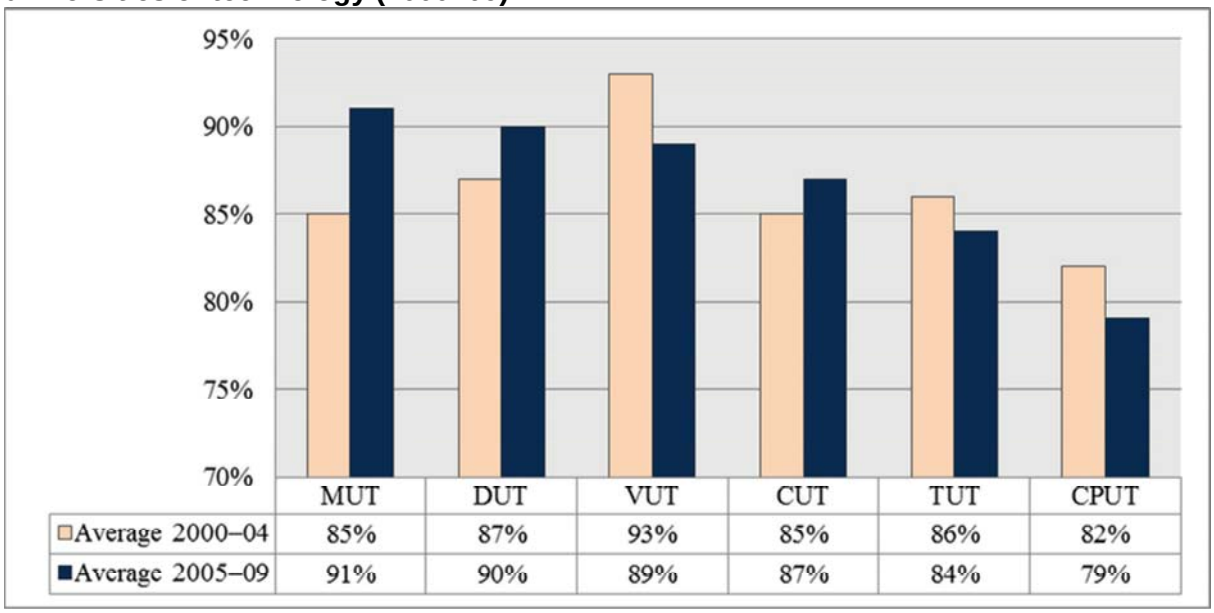
Figure 13: Government grants and students fees as a percentage of total income of comprehensive universities (2000–09)



	WSU	Univen	UZ	UJ	NMMU	UNISA
Average 2000–04	94%	90%	90%	81%	74%	76%
Average 2005–09	96%	88%	81%	75%	74%	72%

Source: HESA (2011b: 14)

Figure 14: Government grants and students fees as a percentage of total income of universities of technology (2000–09)



	MUT	DUT	VUT	CUT	TUT	CPUT
Average 2000–04	85%	87%	93%	85%	86%	82%
Average 2005–09	91%	90%	89%	87%	84%	79%

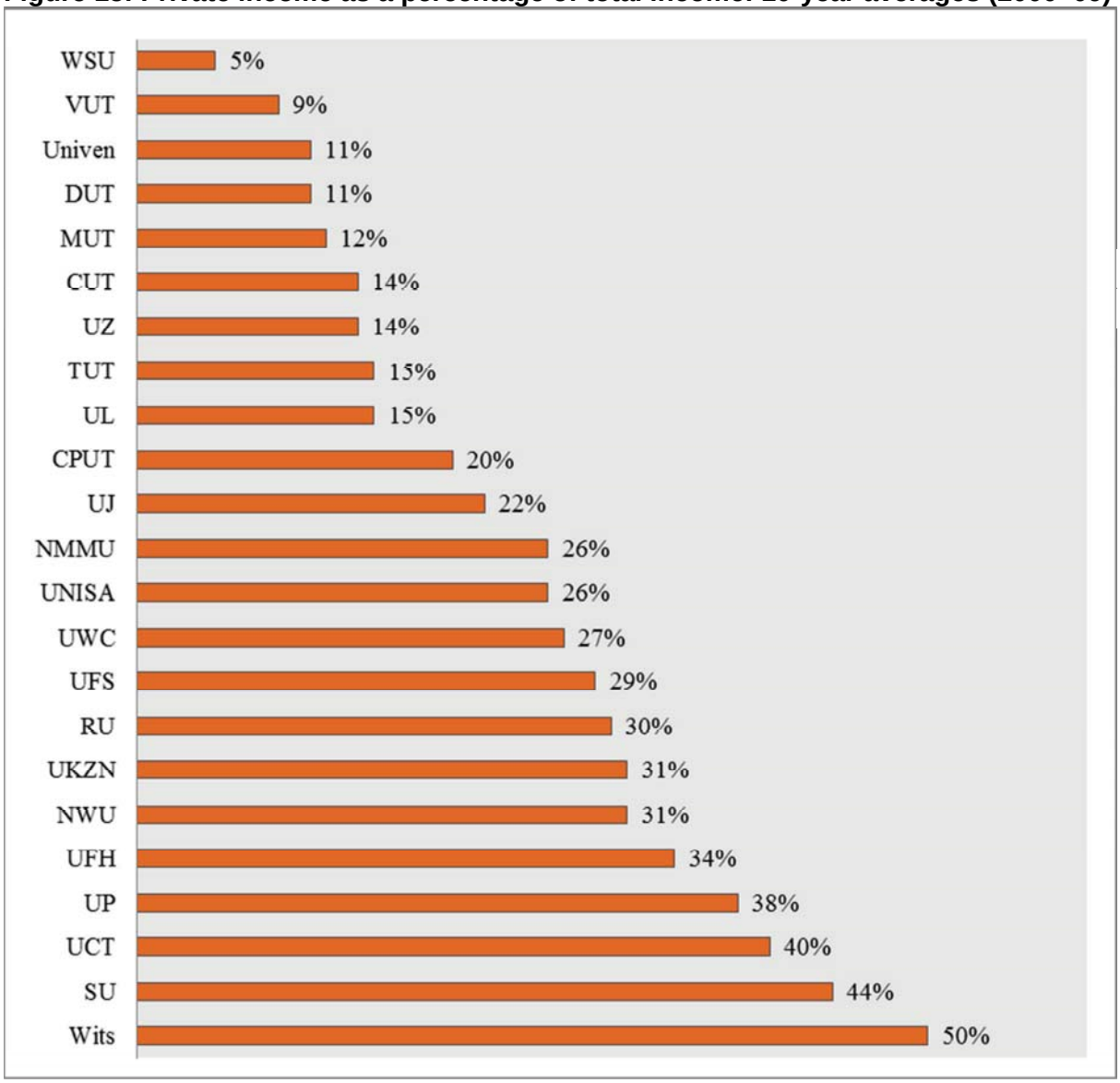
Source: HESA (2011b: 14)

A comparison between the levels of private income generated by universities seems to suggest some correlation between the amounts of private income generated by an institution and the institution's overall financial health as captured by the institutions' income surpluses or deficits. As pointed out in the HESA report (2011b: 16):

- Seven of the nine institutions with average private income proportions below 20% had deficits in three or more years during the period 2000–09. These institutions were: Walter Sisulu University, Vaal University of Technology, University of Venda, Durban University of Technology, Mangosuthu University of Technology, University of Zululand and University of Limpopo.
- Two of the six institutions with private income in the band 20%–29% had deficits in three or more years during 2000–09. These institutions were Nelson Mandela Metropolitan University and University of the Western Cape.
- Two of the six institutions with private income in the band 30%–39% had deficits in three or more years during 2000–09. These institutions were University of KwaZulu-Natal and University of Fort Hare.
- One of the three institutions in the above 40% private income band had a deficit in four years during the period 2000–09. This institution was University of the Witwatersrand.

Private or third-stream income therefore plays some role in the financial health/stability of institutions. However, as shown in Figure 15 (below), this source of income has not been significantly exploited by the majority of HDIs. This data could also suggest that this source of income is only available to a limited extent, if at all, to these institutions by virtue of their location in economically deprived areas.

Figure 15: Private income as a percentage of total income: 10-year averages (2000–09)



Source**:** HESA (2011b: 15)

Mushrooming student debt is a key challenge to the financial health of universities. All South African universities are affected by student debt, to various extents. The accumulated student debt, before any provisions, grew from R2.4 billion in 2005 to R3.8 billion in 2011. However, the student debt problem is quite severe at HDIs and universities of technology. It should be pointed out, however, that even though HDIs attract mainly poor students, it is not clear whether the significant student debt levels at these institutions are a consequence of a majority of poor students combined with inadequate NSFAS support, or of institutional inefficiencies in collecting fees from students. Irrespective of the reasons, though, high levels of student debt are a hindrance to optimal gain from tuition revenue. For universities with

high levels of student debt, coupled with limited private or third-stream income – as is the case for most HDIs – the only reliable source of funding is, inevitably, state funding.

Specific to HDIs' overall financial health, a recent analysis of the 2010 financial records of universities describes the financial positions of Walter Sisulu University, University of Fort Hare, University of Limpopo and Mangosuthu University of Technology as weak. Only the financial positions of University of Zululand and University of the Western Cape are described as strong. The HDIs that are in a weak financial position are generally characterised by weak financial liquidity, operating deficits, liabilities exceeding assets, high debt and very low/declining reserves. With the exception of Walter Sisulu University, which has been consistently financially weak since the merger, the other HDIs' financial positions have been fluctuating – from weak to moderately sound, to strong.

iv. Infrastructure development

The HEQC audit reports and submissions to the Committee by HDIs suggest a general lack of physical infrastructure, laboratories, lecture theatres, library and computer resources and student housing. The infrastructure conundrum is characterised by backlogs, a poor maintenance regime and a faster growth in enrolments than the institutions' carrying capacities. For rural universities, most of which are HDIs, the student housing conundrum is made more complex by the absence of suitable alternative accommodation by private providers which, in certain instances, has constrained expansion in enrolments.

The recent ministerial report on student housing (DHET 2011a) shows that only 20% of students are provided with university accommodation. Other than the limited supply of university accommodation, the report also indicates a poor maintenance regime of not only student residences but also the general infrastructure. It is reported that several universities, many of them HDIs (University of Limpopo, Walter Sisulu University, University of Venda and University of Zululand), only renovate when the need is dire, and had a number of buildings in very bad condition. In his foreword to the housing report, the Minister acknowledges that "many students, particularly those studying in our historically black institutions, have been living in very poor conditions and this has often hampered their ability to succeed" (DHET 2011a: xii). The Minister also mentions the special allocations that the DHET has made for student accommodation, especially to HDIs so that they can improve

their standards of student accommodation. Taking this precedent as a point of departure, it can be argued that establishing a special funding dispensation for HDIs to address the many challenges confronting them is a viable recommendation.

v. Governance/management issues

In the previous sections, attention was given to the unfortunate structural conditions and path dependence of HDIs, namely: geographic location that was influenced by the geo-political imagination of apartheid planners; an apartheid higher education funding regime that deliberately underinvested in these institutions; and poor students, among others. Without underplaying the significant influence of these institutions' structural conditions and the consequent path dependence, it is imperative that a degree of agency be located within these institutions.

Reports of independent assessors and administrators, and HEQC audit reports, suggest management challenges at various HDIs at various times. Assessors' and administrators' reports almost consistently identify breakdown in governance procedures, unprofessional managerial relations, inadequate controls over income and expenditure, among others, as key challenges facing affected institutions. The HEQC audit reports reinforce the assessors' and administrators' reports about management lapses at some HDIs. For instance, the audit report on Walter Sisulu University talks of protracted conflicts between staff, students and management at the institution, fragmentation and lack of coherence between campuses and various parts of the university, poor enrolment planning mechanisms, and poor budgetary control, among other challenges (CHE 2011b). Similarly, the audit report on Mangosuthu University of Technology describes the period before the appointment of the assessor in 2008 as a time of "de-institutionalisation" characterised by the absence of appropriate and functioning governance and management structures (CHE 2012).

Thus, as pointed out by Habib (2001), the challenges facing HDIs are not entirely a result of structural factors beyond the control of these institutions but "the dialectical interplay of structural and agential variables" (Habib 2001: 22). This means that any funding-related interventions must isolate "agential variables" from structural ones.

vi. Estimating funding needs of HDIs

This section outlines a preliminary estimate of the resource needs of HDIs. It specifically provides preliminary estimates of funds required for the following:

a) Infrastructure shortfalls and backlogs.
b) Maintenance and refurbishment of existing infrastructure.
c) Municipal services not provided by local councils.
d) Prioritised improvements as recommended in the CHE institutional audit reports.
e) Planned projects or initiatives intended to improve teaching, learning and research.

The information used in this analysis was obtained through a questionnaire sent to all seven of the HDIs (i.e. University of Fort Hare, University of Limpopo, Mangosuthu University of Technology, University of Venda, Walter Sisulu University, University of the Western Cape and University of Zululand). Student housing is excluded from this analysis as this was comprehensively covered in the recent report of the Ministerial Committee for the Review of Student Housing (DHET 2011a).

It should be emphasised that the estimates provided here are indicative, rather than being an accurate reflection of the funding needs of HDIs. An accurate picture will require a more systematic process in which similar guidelines and norms are applied across the seven HDIs to arrive at the estimated costs or resource needs.

The preliminary estimates of the funding needs of the seven HDIs are captured in Table 34.

Table 34: Preliminary estimates of the funding needs of HDIs (R' million)

	UL	Univen	WSU	UZ	UWC	MUT	UFH
Infrastructure backlogs	R1 788.0	R47.7	R16.0	R487.0	R268.2	R898.6	R589.2
Maintenance	--	R18.1	R216.6	--	R178. 2	R171.0	R173.8
Municipal expenses	R5.6	R2.0	R48.0	R3.3	R0.4	R0.6	R3.3
HEQC recommendations	R15.0	R494.1	--	R99.2	R7.0	--	R341.0
Teaching, learning and research	--	R90.9	R205.3	--	R28.4	--	R725.0
Total	**R1 808.6**	**R652.8**	**R485.9**	**R589.5**	**R482.2**	**R1 070.2**	**R1 832.3**

Note: -- No funding need was indicated by the university for this category.

As shown in Table 34, the estimated funding requirements for the five components ranged from R1 832.3 million for the University of Fort Hare to R482.2 million for the University of the Western Cape. The total estimated funding requirements of the seven universities is R6 921.5 million, with infrastructure backlogs accounting for 59% of the estimated funding needs.

Table 35: HDI funding required for student housing shortages

University	Bed shortage to reach 80% of 2010 enrolment*	Funding required based on average of R240 000 per bed	Allocations made by the DHET for student housing 2012/13–2014/15	Remaining funding required to eliminate shortage
		R'000	R'000	R'000
MUT	6 767	1 624 080	84 936	1 539 144
UFH (Alice)	958	229 920	120 000	109 920
UL (Turfloop)	5 347	1 283 280	120 000	1 163 280
UZ	7 244	1 738 560	119 300	1 619 260
Univen	6 188	1 485 120	132 994	1 352 126
UWC	10 769	2 584 560	20 000	2 564 560
WSU^	12 421	2 981 040	119 300	2 861 740
Total		**11 926 560**	**716 530**	**11 210 030**

Notes: * According to Table 18 of the Student Housing Report (DHET 2011a: 121–122)
^ Excludes Buffalo City

The specific requirements in terms of the different components varied across the seven institutions. For instance, in terms of infrastructure backlogs, the specific needs ranged from lecture theatres and laboratories to student centres, fences, sports centres, laptop computers for staff, vehicular and pedestrian entrances, and parking. In the case of projects for improving teaching, learning and research, the specific requirements included implementation of faculty teaching and learning plans, recruitment of staff with expertise in fields such as digital media and the scholarship of teaching and learning, grants for doctoral students, overseas conference grants, and infrastructure – especially lecture theatres, laboratories and equipment for planned programmes.

As far as HEQC recommendations for improvement are concerned, the funding estimates cover such aspects as experiential and work-integrated learning, e-learning, student mentorship and tutorial assistance, establishment of a disability centre, expansion of the university clinic, expansion of the library, setting up a directorate of teaching and learning, improving management of continuing education, and appointing more lecturers in order to

realise appropriate lecturer-to-student ratios. Municipal expenses generally covered services such as ambulances, fire services, refuse services and, in the case of the University of the Western Cape, safe removal of dental waste as well as chemical waste removal from various science buildings. Two universities did not provide estimates for maintenance. These are the University of Limpopo and the University of Zululand. In the case of the latter, estimates for infrastructure maintenance are included in those for infrastructure development. The estimated amounts were not disaggregated.

Table 35 (above) shows the estimated costs for providing student housing to cover at least 80% of 2010 enrolments. The total estimate is slightly more than R11 billion. This estimate, however, excludes student housing needs for some campuses of the HDIs: namely, University of Fort Hare, University of Limpopo and Walter Sisulu University. Table 35 also shows attempts by the DHET to mitigate the student housing challenge (through its programme of Efficiency and Infrastructure Funding). As can be discerned from Table 35, the funding from the DHET (R716 530 000), though a significant amount, can barely scratch the surface in terms of the magnitude of the challenge.

Overall, the seven HDIs have diverse needs for which funding is required. From the estimates for the various needs, it can be concluded that one of the greatest challenges facing HDIs is a shortage of infrastructure, especially lecture theatres, laboratories, student housing, and facilities for extra-curricular activities such as student centres and sports centres. The total estimate of funds needed to address HDIs' resource needs as discussed in this section is R18 131.5 million.

vii. Summary and conclusion

The analysis in this section has identified some of the key structural variables responsible for several of the challenges experienced by HDIs. The structural variables include funding approaches that were inimical to the establishment of a viable intellectual enterprise, remote geographic locations, and insufficient infrastructure. In addition to structural constraints, it has been argued that "agential variables" (mainly poor governance and management) have, in the case of some HDIs, conspired against meaningful possibilities for overcoming structural constraints. Acknowledging this dialectical interplay of structural and agential variables is crucial in devising properly targeted funding interventions. Two key questions are critical in devising funding interventions for HDIs, namely:

- Which of the challenges confronting HDIs are remediable through financial mechanisms?

- How best should these financial mechanisms be applied to achieve the desired results?

The very difficult issue to address is whether the government would be willing to provide additional funding to address the under-development of the HDIs; and, if not, what the implications would be if the redistribution of existing funds would have to be considered as a means of addressing this problem in the system. Once all institutions are on a par at undergraduate level, there should be no reason why those institutions could not generate adequate funds to make them financially viable.

viii. Recommendations

Considering the multiple nature of the constraints experienced by HDIs and the varying extents to which HDIs are affected by these constraints, it may not be possible to address the constraints through a single, earmarked fund. Furthermore, considering the overwhelming support for limiting the number of earmarked funds, it may be neither possible nor feasible to set up separate earmarked funds for each of the challenges experienced by HDIs. Given this context, a multi-pronged approach – whereby several of the recommendations made below are implemented simultaneously – is suggested.

The Committee makes the following recommendations:

i. The Committee agreed that the financial dispensation of HDIs has to be improved, in view of the extensive challenges faced by these institutions. The Minister should consider introducing an institutional factor grant for HDIs, and it should form 2% of the total block grant allocation. This is essential given the current economic conditions, in which additional funding for higher education might not be realised, which could make it impossible for the Minister to ensure that HDIs receive an improved financial dispensation. Another important consideration for the introduction of an institutional factor grant for HDIs is that in some instances the recommendations put forward by the Committee will have a negative impact on the funding of HDIs. The HDIs are relatively small and a 2% block grant allocation will lead to a 10.2% increase in the block grant allocations of HDIs, which will over time enable these universities to accelerate development. The financial impact of the introduction of an institutional factor grant for HDIs is shown in Table 36 (below).

ii. The DHET should continue to prioritise HDIs in infrastructure development grants until the infrastructure and equipment backlogs have been eradicated and these universities have the necessary infrastructure and equipment to enable them to offer

the same quality undergraduate teaching and learning experience as is offered by the developed universities. The need for additional funding to maintain this additional infrastructure makes the introduction of an institutional factor grant for HDIs all the more important.

iii. A unit must be established to support the development of the HDIs. In view of the managerial and other problems that have occurred in some of these universities, particular attention needs to be paid to accountability with regard to resources allocated.

iv. The challenges faced by the HDIs in terms of the level of poverty of students and under-preparedness of students need to be addressed by increasing funding allocations for foundation programmes, implementing the recommendations made by the NSFAS review committee (DHET 2010a), and strengthening the institutional grant component for disadvantage. As recommended in the recent NSFAS review report, race as a proxy for socio-economic disadvantage should be replaced by a more valid proxy that better reflects the levels of support required by students, especially those from disadvantaged socio-economic backgrounds. The continuing strengthening of NSFAS funding will improve the collection of student fees, which will also improve the financial health of the HDIs.

v. The recommendations of the current Committee with regard to the allocation of research grants and research development grants, which are also addressed in the current report, will enable these universities to improve their research capacity over time. Each of these universities should develop at least one centre of research excellence based on its strengths, and the establishment of these centres should be funded by the DHET.

vi. It is important that a full costing be done of the backlogs and deficits in the operational costs of these universities, in order to establish the extent of the resources that would be needed to address the under-development of these institutions. The full costing would serve as the basis for negotiations for an improved financial dispensation for higher education, and would provide the necessary leverage for making a meaningful improvement in the conditions at these universities.

vii. These recommendations certainly do not address all of the resource-related challenges faced by HDIs, such as, for example, inadequate municipal services. Challenges such as inadequate municipal services cannot be addressed sustainably through a higher education funding framework, and could justifiably be regarded as ‘service delivery’ issues requiring the involvement of other departments, such as local government, public works, communications and so on. An inter-ministerial forum for addressing these challenges is one possible intervention.

viii. Acknowledgement is given to the changes that have already been effected based on the NSFAS review (DHET 2010a). The initiative of the full funding of third-year students as an incentive for these students to complete their studies is but one. Other than revising the NSFAS allocation formula to reflect actual levels of financial need, the recommendation made in the NSFAS review report regarding enhancing allocations to NSFAS should be re-emphasised. This will not only benefit increased numbers of deserving students – including the so-called 'missing middle' – but will also assist in addressing the unacceptably high levels of student debt, especially in the HDIs.

ix. All universities, including the HDIs, should be encouraged to manage their student enrolments prudently. Universities' enrolment data has shown that some universities have exceeded their enrolment targets. This over-enrolment has often constrained these universities' facilities and infrastructure, and has impacted negatively on the quality of education offered.

x. Universities that have incorporated campuses of former HDIs should receive a special dispensation in the infrastructure and efficiency earmarked grant until infrastructure backlogs at these campuses have been eliminated.

Table 36: Modelling of the introduction of an institutional factor grant for HDIs

University	Current formulas			Top slice of 2% in block grant			HDI additional block grant	Total	Increase in funding	
	Block grant (R'000)	Earmarked research development funds (R'000)	Total (A) (R'000)	Block grant (R'000)	Earmarked research development funds (R'000)	Total (R'000)	(pro-rata distribution of the 2% among HDIs) (R'000)	(B) (R'000)	(B - A) (R'000)	Increase (%)
CPUT	801 829	7 137	808 966	785 792	6 995	792 787		792 787	-16 179	-2.0
UCT	974 808	0	974 808	955 312	0	955 312		955 312	-19 496	-2.0
CUT	281 218	3 965	285 183	275 593	3 886	279 479		279 479	-5 704	-2.0
DUT	591 665	9 806	601 471	579 832	9 610	589 442		589 442	-12 029	-2.0
UFH	**269 498**	**2 155**	**271 653**	**264 108**	**2 111**	**266 219**	**33 163**	**299 382**	27 729	**10.2**
UFS	775 250	3 943	779 193	759 745	3 865	763 610		763 610	-15 583	-2.0
UJ	1 143 400	0	1 143 400	1 120 532	0	1 120 532		1 120 532	-22 868	-2.0
UKZN	1 290 835	0	1 290 835	1 265 018	0	1 265 018		1 265 018	-25 817	-2.0
UL	**606 841**	**39 090**	**645 931**	**594 704**	**38 309**	**633 013**	**78 854**	**711 867**	65 936	**10.2**
MUT	**223 536**	**3 703**	**227 239**	**219 065**	**3 629**	**222 694**	**27 741**	**250 435**	23 196	**10.2**
NMMU	640 299	0	640 299	627 493	0	627 493		627 493	-12 806	-2.0
NWU	1 024 698	9 856	1 034 554	1 004 204	9 659	1 013 863		1 013 863	-20 691	-2.0
UP	1 521 080	4	1 521 084	1 490 658	4	1 490 662		1 490 662	-30 422	-2.0
RU	267 931	0	267 931	262 573	0	262 573		262 573	-5 358	-2.0
UNISA	1 713 664	40 258	1 753 922	1 679 390	39 453	1 718 843		1 718 843	-35 079	-2.0
SU	975 028	0	975 028	955 528	0	955 528		955 528	-19 500	-2.0
TUT	1 197 061	4 906	1 201 967	1 173 120	4 808	1 177 928		1 177 928	-24 039	-2.0
VUT	422 694	5 448	428 142	414 240	5 339	419 579		419 579	-8 563	-2.0
Univen	**296 659**	**14 431**	**311 090**	**290 726**	**14 142**	**304 868**	**37 977**	**342 845**	31 755	**10.2**
WSU	**519 874**	**21 036**	**540 910**	**509 476**	**20 615**	**530 091**	**66 033**	**596 124**	55 214	**10.2**
UWC	**570 306**	**2 442**	**572 748**	**558 900**	**2 393**	**561 293**	**69 920**	**631 213**	58 465	**10.2**
Wits	1 018 729	0	1 018 729	998 354	0	998 354		998 354	-20 375	-2.0
UZ	**306 959**	**8 640**	**315 599**	**300 820**	**8 467**	**309 287**	**38 528**	**347 815**	32 216	**10.2**
Total	**17 433 862**	**176 820**	**17 610 682**	**17 085 183**	**173 285**	**17 258 468**	**352 214**	**17 610 682**	**0**	**0.0**

Source: DHET subsidy allocations for 2012/13 based on 2010 audited HEMIS data

7. Teaching and learning

7.1 Teaching input grant

i. Description and purpose of the grant

The teaching input grant forms part of the block grant allocation to universities and provides financial support to universities for teaching and research supervision services provided by universities. The teaching input grant is the largest component of the total funding allocation to the university sector (48% in 2012/13 with NSFAS funding included). As part of the block grant it plays a vital role in providing financial stability to universities. The allocation methodology applied is described in Section 5 of the current report. The teaching input grant is allocated on the basis of a funding grid consisting of 32 cells containing different weights for: groups of subject matter (based on the relative cost differentials in offering different subject matters); qualification levels (it is more expensive to offer higher levels); and offering type (contact mode offerings being more expensive than distance mode offerings due to the range of on-campus student services that must be provided).

A very important notion with regard to the teaching input funding grid is that the Minister approves the allocation of grants to institutions for a specific funding year, taking account of (a) the total amounts allocated to higher education by National Treasury, and (b) the enrolment plans approved for each institution (MoE 2004). The fact that enrolment plans and, in particular, targets are taken into account has a direct impact on the actual amounts allocated to universities, especially with regard to the teaching input grant. The current teaching input funding grid and the enrolment planning targets (which determine the institutional share of the teaching input grid) in combination determine the grant allocated to individual universities. The current teaching input funding grid has been in existence since the inception of the current funding framework, which was applied for the first time in the financial year 2004/05.

Although the actual number of FTE enrolled students is weighted by running it through the teaching input funding grid, the DHET only funds the approved TIUs that were determined as a result of the three-year enrolment plans. This has a very limiting effect on any proposed changes to the teaching input funding grid, and this point is further argued in the section on the funding of over- and under-enrolments.

ii. Inputs received from universities and other role-players in university education with regard to the funding grid

In the HESA submission to the Committee (October 2011) it was stated that "the (current) ratios between subject matter groupings and qualification levels were based on detailed analyses of 1997 institutional costs per FTE enrolled student within the broad fields of study" and that "The results of these analyses are sets of relative, rather than actual cost norms" (HESA 2011b: 29).

HESA's submission to the Committee summarises inputs received from the universities with regard to the teaching input funding grid, as follows:

a) The funding grid, with its four levels for subsidy purposes, should be reviewed more regularly, as the country's skills needs may change regularly.

b) The funding for distance education must be reviewed.

c) The current teaching input funding grid should be replaced by one that is based on *absolute* and not *relative* cost norms, to indicate what a university actually needs in order to operate.

d) Government subsidies to higher education institutions should take account of the wide variations that exist, in the costs of teaching, by qualification level and field of study. While subsidies should (ideally) reflect the actual cost of particular activities, an important element in the calculation of teaching inputs will be the relative costs of key activities.

e) The Education Deans Forum indicated that education is currently placed in the lowest funding group, belying its resource-intensive nature. It is recommended that education be moved to funding group 2 or 3 to allow it to be better funded.

f) With regard to the education CESM, it was also noted that when the teacher training colleges were closed down, the funding did not go to the university sector but was absorbed into the provincial budgets.

g) The fact that various submissions indicated that the funding grid should be reviewed more regularly, because the country's skills needs change regularly, implies that there should be a scarce-skills incentive built into the grid.

h) Submissions emphasised that it is crucial that social sciences and humanities also be incentivised. The incentives for offerings in SET and in business and management sciences lead to a dilution of support for the social sciences and humanities.

i) The equalisation of funding between distance and contact education postgraduate qualifications was questioned in the submissions, since the activities to attain these qualifications under different modes of delivery are not the same. The implication of the submissions in this regard is that distance education postgraduate qualifications (masters and doctoral level) should receive less funding.

j) A crucial and very important input to the analysis of the funding grid is the response to a question that was included in the questionnaire that was sent by the Committee to all the institutions. The question pertains to changes that the institutions would like to suggest to the CESM groupings for funding purposes. The proposals are summarised per university in Table 37 (below, a four-part table). No direct evidence of the differential costs for the proposed changes was provided in the responses received, but the suggestion of movement to higher funding categories was substantiated, in the main, by the argument that these categories are more resource intensive.

iii Methodology for the revision of the funding grid

a) The Committee decided that due to time constraints an extensive exercise such as the one applied with the initial development of the funding grid would not be viable. The original development of the funding grid took three years. The current funding grid was taken as a point of departure and changes were only recommended if enough evidence could be found that such changes were needed.

b) The Committee decided that the funding grid should be based on cost, and not on a combination of cost and prioritisation. It was felt that steering priority areas should be done through other means such as providing bursaries, for example, Funza Lusaka bursaries for initial teacher education training.

c) It was decided that universities would be approached for expenditure data based on cost models, where these has been implemented, to use as a basis for the review. All of the universities were approached, and the Committee received information from five institutions: a university, a comprehensive university, two universities of technology and the main distance education provider.

d) Various attempts were made by the Committee – but without success – to obtain information from more universities. The majority of universities indicated that they could not provide the information in the format required.

Table 37: Proposals received from universities regarding shifts in CESM categories

Funding group	Current CESM categories	CPUT	UCT	CUT	DUT	UFH	UFS
1	07 education; 12 law; 18 psychology; 19 public administration & services			Remain as is	17 philosophy, religion & theology	Remain as is	Move entire groups 1 into 2 and have only three funding groups
2	04 business, economics & management studies; 05 communication & journalism; 06 computer & information sciences; 11 languages, linguistics & literature; 17 philosophy, religion & theology; 20 social sciences	07 education (large number of subjects, small class groups and teaching practice make this programme expensive)					
3	02 architecture & the built environment; 08 engineering; 10 family ecology & consumer sciences; 15 mathematics & statistics	06 computer & information sciences (make intensive use of computer laboratories)	06 computer & information sciences		06 computer & information sciences		
4	01 agriculture & agricultural operations; 03 visual & performing arts; 09 health professions & related clinical sciences; 13 life sciences; 14 physical sciences; 16 military sciences	08 engineering (laboratories are expensive to maintain)	09b allied health; 18 Add professional training in psychology		08 engineering		
5			09a clinical sciences, veterinary science				

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 37 (*continued*): Proposals received from universities regarding shifts in CESM categories

Funding group	Current CESM categories	UKZN	UJ	UL	NMMU	NWU	UP
1	07 education; 12 law; 18 psychology; 19 public administration & services					Remain as is	Remain as is
2	04 business, economics & management studies; 05 communication & journalism; 06 computer & information sciences; 11 languages, linguistics & literature; 17 philosophy, religion & theology; 20 social sciences	07 education		07 education; 18 psychology			
3	02 architecture & the built environment; 08 engineering; 10 family ecology and consumer sciences; 15 mathematics & statistics	06 computer & information sciences	06 computer & information sciences; 11 languages, linguistics & literature		06 computer & information sciences		03 visual & performing arts on margin could be moved to 3
4	01 agriculture & agricultural operations; 03 visual & performing arts; 09 health professions and related clinical sciences; 13 life sciences; 14 physical sciences 16 military sciences	08 engineering	08 engineering		08 engineering		08 engineering on margin could be moved to 4
5				01 agriculture & agricultural operations; 09 health professions & related clinical sciences			

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 37 *(continued)*: Proposals received from universities regarding shifts in CESM categories

Funding group	Current CESM categories	RU	UNISA	SU	TUT	Univen	VUT
1	07 education; 12 law; 18 psychology; 19 public administration & services	Remain as is					There is no specific CESM between 12 law and 20 social sciences. There needs to be an extra CESM category, for criminal law and police sciences
2	04 business, economics & management studies; 05 communication & journalism; 06 computer & information sciences; 11 languages, linguistics & literature; 17 philosophy, religion & theology; 20 social sciences		18 psychology				
3	02 architecture & the built environment; 08 engineering; 10 family ecology & consumer sciences; 15 mathematics & statistics		17 philosophy, religion & theology	06 computer & information sciences		06 computer & information sciences	
4	01 agriculture & agricultural operations; 03 visual & performing arts; 09 health professions & related clinical sciences; 13 life sciences; 14 physical sciences; 16 military sciences			08 engineering	02 architecture & the built environment; 08 engineering	09 health professions & related clinical sciences, including clinical psychology	Currently environmental science falls under the second order CESM 1405 i.e. geography and cartography as a 'third order' CESM. This CESM should be broadened in order to fit the characteristics of environmental sciences in its broader capacity.

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 37 (*continued*): Proposals received from universities regarding shifts in CESM categories

Funding group	Current CESM categories	WSU	UWC	Wits	uz	MUT
1	07 education; 12 law; 18 psychology; 19 public administration & services	17 philosophy, religion & theology		17 philosophy, religion & theology		
2	04 business, economics & management studies; 05 communication & journalism; 06 computer & information sciences; 11 languages, linguistics & literature; 17 philosophy, religion & theology; 20 social sciences	15 mathematics & statistics; 18 psychology; 12 law	07 education	10 family ecology & consumer sciences		19 public administration & services
3	02 architecture & the built environment; 08 engineering; 10 family ecology & consumer sciences; 15 mathematics & statistics	06 computer & information sciences	06 computer & information sciences	06 computer & information sciences		
4	01 agriculture & agricultural operations; 03 visual & performing arts; 09 health professions & related clinical sciences; 13 life sciences; 14 physical sciences; 16 military sciences			08 engineering	06 computer & information sciences; 10 family ecology & consumer sciences	

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

e) The financial information provided by the five institutions did not conform in every aspect. In the case of two of the universities, only the direct cost (staff and operational cost) could be calculated, while for the other three universities (which included the distance education provider) the total cost including overheads could be calculated. For two of the universities the cost differentials per level could also be calculated.

f) Expenditure per FTE per CESM for direct and total cost (where possible) and per level was calculated. In cells of the grid where there were low FTE enrolments the findings were discarded, since it was evident from the analysis that more reliable information was obtained from cells with higher FTE enrolments. The outcomes of the individual analyses are not presented in the current report since the information was provided on condition of anonymity. The purpose of the study was not to look at expenditure patterns of the individual universities but rather to look for clear patterns and substantive evidence for changes that were needed. Table 38 (below) shows the ratios between the various funding groups, based on the current CESM groupings for the five universities that submitted data. Table 39 (below) shows the cost per CESM in terms of the direct and/or total cost (total cost includes direct and indirect cost), as a ratio of the least expensive CESM, per university analysed – for five universities. When evaluating the proposals from universities, cognisance was taken of the enrolled FTEs per CESM. It was found, for example, that for philosophy and religious studies the high cost, in the case of some of the universities, was directly related to very low FTE enrolments: three enrolled FTEs in one case.

g) The proposed changes put forward by universities were then evaluated based on the analyses done, as well as on various scenarios that were developed to test the impact of proposed changes.

Table 38: Weights of the current CESM groupings for direct cost and total cost between the funding groups, based on the analysis of the data submitted by five universities (2010)

Funding group	CESM	Direct cost	Total cost
Group 1	University 1	1.000	1.000
	University 2	1.000	
	University 3		1.000
	University 4	1.000	1.000
	Average: Contact institutions	1.000	1.000
	University 5: Distance institution		1.000
Group 2	University 1	1.076	1.200
	University 2	1.358	
	University 3		1.226
	University 4	1.214	1.162
	Average: Contact institutions	1.142	1.155
	University 5: Distance institution		1.139
Group 3	University 1	2.181	1.576
	University 2	2.527	
	University 3		2.119
	University 4	1.826	1.753
	Average: Contact institutions	2.081	1.783
	University 5: Distance institution		1.565
Group 4	University 1	3.608	2.227
	University 2	3.427	
	University 3		3.340
	University 4	2.755	2.642
	Average: Contact institutions	3.218	2.779
	University 5: Distance institution		1.753

Notes: Only the direct cost is available for University 2. For University 3 the total cost is available but the direct cost cannot be separated out.

Table 39: Direct and indirect cost per CESM, as a ratio of the least expensive CESM, in direct and/or total cost group (2010)

			University 1 – Contact		University 2 – Contact		University 3 – Contact		University 4 – Contact		University 5 – Distance	
Funding group	CESM	CESM name	Direct cost as ratio of least expensive CESM	Total cost as ratio of least expensive CESM	Direct cost as ratio of least expensive CESM	Total cost as ratio of least expensive CESM	Direct cost as ratio of least expensive CESM	Total cost as ratio of least expensive CESM	Direct cost as ratio of least expensive CESM	Total cost as ratio of least expensive CESM	Direct cost as ratio of least expensive CESM	Total cost as ratio of least expensive CESM
Group 1	07	Education	1.26	1.13	1.97		1.24	1.15		1.04		1.00
	12	Law	1.00	1.27	1.00		1.00	1.00		1.00		1.43
	18	Psychology	2.50	1.63	4.85		1.80	1.52		1.12		1.43
	19	Public administration	1.04	1.00	1.28		2.02	1.78		1.10		1.07
	Average: Group 1		1.14	1.15	1.42		1.27	1.19		1.04		1.20
Group 2	04	Business	1.12	1.34	1.83		1.30	1.19		1.15		1.24
	05	Communication & journalism	1.30	1.41	1.99		2.16	1.80		1.25		1.47
	06	Computer & information sciences	1.34	1.45	2.26		1.66	1.56		1.47		1.44
	11	Lang, linguistics, literature	1.26	1.38	1.61		2.34	1.89		1.58		1.53
	17	Philosophy, religion	8.76	4.46			1.81	1.57		3.35		2.62
	20	Social sciences	2.01	1.50	4.54		2.04	1.68		1.50		1.69
	Average: Group 2		1.22	1.38	1.93		1.55	1.38		1.27		1.36
Group 3	02	Architecture & built environment	1.87	1.65	3.58		2.13	1.82		1.80		
	08	Engineering	2.68	1.87	4.08		2.74	2.52		2.77		2.66
	10	Family ecology & consumer sciences	3.09	2.05	2.14		2.74	2.47		1.10		2.57
	15	Mathematics & statistics	2.03	1.64	2.40		1.70	1.44		2.01		1.45
	Average: Group 3		2.48	1.81	3.60		2.32	2.08		2.20		1.87
Group 4	01	Agriculture	4.52	2.61	4.03		5.26	4.53		2.18		1.91
	03	Visual & performing arts	5.02	3.17	5.14		2.15	1.89		3.42		3.27
	09	Health profess & clinical sciences	3.70	2.31	5.69		3.87	3.35		2.73		1.43
	13	Life sciences	3.68	2.27	4.86		3.49	3.23		4.42		1.52
	14	Physical sciences	3.70	2.34	4.53		3.05	2.82		4.92		2.71
	Average: Group 4		4.10	2.56	4.88		3.51	3.13		3.47		2.10

iv. Findings of the analysis

1) All of the proposals put forward by the individual universities were tested against the costing information obtained from the analysis of the data supplied by the five universities.

2) The Committee *did not support the following proposed changes* for the following reason/s: no evidence based on the available data was found for the need to make these changes; and/or the Committee did not agree with the motivation put forward for these changes:

- Various universities proposed that the weights for masters and doctoral programmes be increased to incentivise postgraduate studies and outputs of research graduates. The data, however, suggested that there is more evidence for reducing the weights for postgraduate programmes, and did not support this proposal. The argument put forward by the Committee was that the grid should not be used as a prioritisation mechanism but should only be based on cost. The proposed **increased weights for postgraduate programmes** were **not supported**.

- The proposal to move **philosophy, religion and theology** from funding group 2 to 1 was **not supported** after analysing the cost calculated from the submitted data.

- A number of institutions proposed that education be moved from funding group 1 to 2. The Committee found **no evidence that education should move to funding group 2**. The conclusion reached by the Committee was that the internal university mechanisms for distributing funds may be inadequate, prompting this perceived under-funding of education.

- **No evidence was found that psychology should move from funding group 1 to 2** as proposed by four universities, and the proposal was not supported.

- The proposal to move l**anguages, linguistics and literature to funding group 3 was not supported**, since insufficient evidence was found in the data. It appeared that the perceived higher cost is related to the proportion of enrolments in postgraduate studies, for which there is an additional weight built into the grid.

- The proposed move of **visual and performing arts from funding group 4 to 3 was not supported** by the Committee after careful consideration.

- The proposal that family ecology and consumer science move to funding group 2 could not be substantiated by the available data. The Committee concluded **that family ecology and consumer science should remain in funding group 3.**

- Proposals that an **additional funding category** be added with a higher weight for **medicine and veterinary sciences were not supported**, in view of the fact that these programmes also receive clinical grants or earmarked grants that specifically provide additional funding resources.
- Submissions received motivating for a **higher level of funding for distance education provisioning were not supported**. Analyses of the data received from the universities confirmed that **distance education is adequately funded** and that huge improvements in the quality of distance education provisioning can easily be done within the current subsidy allocations. The data received from the universities showed that the cost of offering distance education programmes was less than or equal to 50% of the cost of offering contact programmes at all levels.

3) Following an evaluation of the proposals for changes made by universities and the available data analyses, the Committee recommended that the **following proposals be further investigated and modelled**:

- Combining funding groups 1 and 2 – this may be viable considering that the costs of these programmes are generally on a par.
- Moving business, economics and management studies to funding group 1 – the Committee claimed that there is no justification for this programme being included in funding group 2.
- Moving masters and doctoral studies in psychology to higher funding groups – a special case was made for the masters in clinical psychology.
- Moving computer and information sciences to funding group 3 – the data available supported that it was on the margin of funding groups 2 and 3. The request was also made for computer literacy or end-user computing to be separated out, with only the remainder of computer and information sciences being considered for moving to funding group 3.
- Moving engineering to a higher funding category – this was strongly supported in the light of the very high costs shown in the data, which were much more in line with the cost of the CESM groupings in funding group 4.
- Splitting the health sciences between CESM 9a (nursing, rehabilitation, therapy etc.) and CESM 09b (all other health care and health sciences) due to the perceived different cost structures of these two categories of health sciences – the proposal was moving CESM 09a to funding group 3 and keeping CESM 09b in funding group 4.

Different scenarios were also developed based on the observed differences in weights between the funding groups in the data received from the five universities. These scenarios would, however, have to be revisited and the data re-evaluated once all the approved movements had been done, since the weights changed as the proposed CESMs were moved to different categories.

4) The impact of the changes of the CESMs in the funding groups and the weights, defined by the different scenarios, can only be assessed by comparing the outcomes of the scenarios with the actual TIUs of 2010. It was not possible to test the impact of these changes using the funded TIUs, which are implemented as a result of the enrolment planning process.

5) The various scenarios were tested and evaluated by the Committee. Following this second round of analysis, the Committee found the following:

- The splitting out of computer literacy or end-user computing from CESM 06 for computer science and information sciences was not viable due to the coding system, and thus this proposal was not approved.
- The splitting of health sciences into two funding groups did not render significant different results, and thus this proposal was not approved.
- The movement of psychology masters and doctoral programmes to a higher funding group also made no significant change, and thus this proposal was not approved.
- The splitting out of the masters in clinical psychology was problematic due to the fact that it is a programme and not a CESM category as such, and consequently this proposal was not approved.
- In view of the findings and decisions listed above, the Committee decided that the idea of splitting of CESMs further, to third-order CESMs for different funding groupings, should be abandoned.
- The much lower cost of offering business, economics and management studies, which was evident in the data of the five universities, made it clear that this CESM 04 should be moved to funding group 1.
- Although computer and information sciences was on the margin of funding groups 2 and 3, the Committee decided to move this CESM 06 to funding group 3, in view of the fact that the majority of universities indicated, based on their experience of the cost involved, that it should be moved to a higher funding category.

- The data showed a clear need to move engineering (CESM 08) to the highest funding group.
- Although the data supported a lower weight differential between the funding groups, the data did not adequately support a differential weight between the levels from undergraduate through to the various postgraduate levels. It appeared that doctoral studies were not that much more costly to offer than masters programmes; however, the data between the two universities for which this information could be extracted differed too much to be decisive and it was decided to retain the same weight between the four levels.

6) Based on the outcomes of all of the analyses and scenarios developed it was decided to model the following two scenarios:

Model 1	Model 2
CESM 06: From 2 to 3 CESM 04: From 2 to 1 CESM 08: From 3 to 4 Level weights as current Distance education weight = 0.5	Same as model 1 + collapsing funding groups 2 & 3, weights 1, 2.5, 3 Level weights as current Distance education weight = 0.5

Model 1 was the base model, developed as a result of the evidence that indicated that these shifts would be needed. Four funding groups were retained with the current funding grid weights.

Model 2 is the same as Model 1 but collapses funding groups 1 and 2 with the rounded-off weights shown by the university data after their two funding groups were collapsed. The two funding groups were collapsed because the funding weights of funding groups 2 and 3 were very similar.

The various changes in funding groups as well as proposed changes in weights will change the TIUs per university as well as the total TIUs for the system as a whole. Table 42 (below) shows that the total actual TIUs will change from 1 160 362 for the base case to 1 161 464 for Model 1 and 1 156 102 for Model 2.

The nominal gains and losses for each of the two scenarios or models for the institutions are shown in Tables 40–42. Tables 43–45 show the Committee's attempt to map the relative shift of the TIUs between the institutions for the different scenarios. This was done by normalising the 'actual' TIUs obtained in the scenarios – as indicated in the last row of Tables 40 and 41 – and scaling them to the actual TIUs of 2010. The change in the TIUs for each institution, relative to the 2010 value, is shown in Tables 43–45 together with a column indicating the percentage change.

It is difficult to establish the exact financial implications for each university due to the fact that not all TIUs are funded as a result of the enrolment planning process, but an estimate can be determined by multiplying the increase or decrease in TIUs by R10 000, which is more or less the current value of one TIU. The results for the individual universities are shown in Table 46. It is clear that the DHET could easily offset this additional cost through an approximate amount of R200 million to fund those universities that will receive less funding as a result of the changes for a period for the shortfall or by injecting more funding into the teaching input grant. The need for additional funding from government is motivated in the section on over- and under-enrolments.

Table 40: TIUs for different groupings and weights for the funding grid (contact institutions)

University	Contact					
	Base case		Model 1		Model 2	
			CESM 06: From 2 to 3 CESM 04: From 2 to 1 CESM 08: From 3 to 4		Same as Model 1 + collapsing funding groups 2&3 Weights: 1, 2.5, 3	
	TIU	TIU (%)	TIU	TIU (%)	TIU	TIU (%)
CPUT	55 658	5.47	57 898	5.62	55 359	5.43
UCT	56 562	5.56	57 093	5.54	56 956	5.59
CUT	19 831	1.95	21 791	2.12	20 863	2.05
DUT	41 929	4.12	43 991	4.27	42 825	4.20
UFH	**18 765**	**1.84**	**18 373**	**1.78**	**20 270**	**1.99**
UFS	50 694	4.98	49 135	4.77	49 192	4.82
UJ	77 997	7.66	74 802	7.26	75 045	7.36
UKZN	72 026	7.07	71 633	6.96	70 749	6.94
UL	**45 127**	**4.43**	**44 526**	**4.32**	**43 431**	**4.26**
NMMU	40 122	3.94	39 990	3.88	39 858	3.91
NWU	54 342	5.34	52 764	5.12	54 545	5.35
UP	94 856	9.32	97 757	9.49	93 249	9.14
RU	15 197	1.49	14 841	1.44	15 900	1.56
UNISA	683	0.07	683	0.07	1 095	0.11
SU	68 121	6.69	68 430	6.64	66 523	6.52
TUT	75 324	7.40	78 154	7.59	75 542	7.41
VUT	33 386	3.28	35 888	3.48	34 087	3.34
Univen	**19 657**	**1.93**	**19 338**	**1.88**	**19 938**	**1.96**
WSU	**41 394**	**4.07**	**44 408**	**4.31**	**45 374**	**4.45**
UWC	**36 842**	**3.62**	**36 537**	**3.55**	**37 383**	**3.67**
Wits	63 427	6.23	64 457	6.26	62 212	6.10
UZ	**21 567**	**2.12**	**21 014**	**2.04**	**23 861**	**2.34**
MUT	**14 684**	**1.44**	**16 306**	**1.58**	**15 456**	**1.52**
Total	**1 018 191**	**100.00**	**1 029 810**	**100.00**	**1 019 713**	**100.00**

Table 41: TIUs for different groupings and weights for the funding grid (distance education institutions)

University	Distance					
	Base case		Model 1		Model 2	
			CESM 06: From 2 to 3 CESM 04: From 2 to 1 CESM 08: From 3 to 4		Same as Model 1 + collapsing funding groups 2 & 3 Weights: 1, 2.5, 3	
	TIU	TIU (%)	TIU	TIU (%)	TIU	TIU (%)
CPUT	33.82	0.02	33.82	0.03	29.11	0.02
UCT	0.00	0.00	0.00	0.00	0.00	0.00
CUT	165.33	0.12	144.09	0.11	146.04	0.11
DUT	0.00	0.00	0.00	0.00	0.00	0.00
UFH	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
UFS	1 241.27	0.87	1 043.47	0.79	1 090.14	0.80
UJ	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
UKZN	2 870.04	2.02	2 595.24	1.97	2 439.03	1.79
UL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
NMMU	762.32	0.54	765.93	0.58	750.30	0.55
NWU	8 702.57	6.12	8 925.54	6.78	9 450.99	6.93
UP	4 033.46	2.84	4 033.46	3.06	4 032.85	2.96
RU	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
UNISA	123 724.14	87.03	113 475.34	86.19	117 807.15	86.38
SU	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
TUT	637.27	0.45	636.99	0.48	643.54	0.47
VUT	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
Univen	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
WSU	**0.15**	**0.00**	**0.15**	**0.00**	**0.15**	**0.00**
UWC	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Wits	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
UZ	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
MUT	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total	**142 170**	**100.00**	**131 654**	**100.00**	**136 389**	**100.00**

Table 42: TIUs for different groupings and weights for the funding grid (total)

University	Total					
	Base case		Model 1		Model 2	
			CESM 06: From 2 to 3 CESM 04: From 2 to 1 CESM 08: From 3 to 4		Same as Model 1 + collapsing funding groups 2 & 3, Weights: 1, 2.5, 3	
	TIU	TIU (%)	TIU	TIU (%)	TIU	TIU (%)
CPUT	55 691.9	4.80	57 932	4.99	55 388	4.79
UCT	56 561.8	4.87	57 093	4.92	56 956	4.93
CUT	19 996.5	1.72	21 935	1.89	21 009	1.82
DUT	41 928.9	3.61	43 991	3.79	42 825	3.70
UFH	**18 765.4**	**1.62**	**18 373**	**1.58**	**20 270**	**1.75**
UFS	51 935.5	4.48	50 178	4.32	50 282	4.35
UJ	77 996.9	6.72	74 802	6.44	75 045	6.49
UKZN	74 896.5	6.45	74 229	6.39	73 188	6.33
UL	**45 126.9**	**3.89**	**44 526**	**3.83**	**43 431**	**3.76**
NMMU	40 884.4	3.52	40 756	3.51	40 608	3.51
NWU	63 044.8	5.43	61 690	5.31	63 996	5.54
UP	98 889.1	8.52	101 790	8.76	97 282	8.41
RU	15 196.7	1.31	14 841	1.28	15 900	1.38
UNISA	124 406.9	10.72	114 158	9.83	118 902	10.28
SU	68 121.0	5.87	68 430	5.89	66 523	5.75
TUT	75 961.6	6.55	78 791	6.78	76 185	6.59
VUT	33 385.5	2.88	35 888	3.09	34 087	2.95
Univen	**19 657.1**	**1.69**	**19 338**	**1.67**	**19 938**	**1.72**
WSU	**41 394.3**	**3.57**	**44 408**	**3.82**	**45 374**	**3.92**
UWC	**36 842.1**	**3.18**	**36 537**	**3.15**	**37 383**	**3.23**
Wits	63 427.1	5.47	64 457	5.55	62 212	5.38
UZ	**21 566.6**	**1.86**	**21 014**	**1.81**	**23 861**	**2.06**
MUT	**14 684.0**	**1.27**	**16 306**	**1.40**	**15 456**	**1.34**
Total	**1 160 362.0**	**100.00**	**1 161 464**	**100.00**	**1 156 102**	**100.00**

Table 43: The change in TIUs for each university for the two scenarios/models (contact institutions)

University	Contact				
	Base case	Model 1		Model 2	
		CESM 06: From 2 to 3 CESM 04: From 2 to 1 CESM 08: From 3 to 4		Same as Model 1 + collapsing funding groups 2 & 3 Weights: 1, 2.5, 3	
	Actual TIU 2010	Δ TIU	Change (%)	Δ TIU	Change (%)
CPUT	55 658	1 587	2.85	-381	-0.69
UCT	56 562	-113	-0.20	309	0.55
CUT	19 831	1 714	8.64	1001	5.05
DUT	41 929	1 566	3.73	832	1.99
UFH	**18 765**	**-600**	**-3.20**	**1 474**	**7.86**
UFS	50 694	-2 114	-4.17	-1 575	-3.11
UJ	77 997	-4 039	-5.18	-3 064	-3.93
UKZN	72 026	-1 201	-1.67	-1 383	-1.92
UL	**45 127**	**-1 103**	**-2.44**	**-1 760**	**-3.90**
NMMU	40 122	-584	-1.45	-324	-0.81
NWU	54 342	-2 173	-4.00	122	0.22
UP	94 856	1 798	1.90	-1 746	-1.84
RU	15 197	-523	-3.44	680	4.47
UNISA	683	-8	-1.13	410	60.10
SU	68 121	-463	-0.68	-1 697	-2.49
TUT	75 324	1 947	2.59	105	0.14
VUT	33 386	2 098	6.28	650	1.95
Univen	**19 657**	**-537**	**-2.73**	**251**	**1.28**
WSU	**41 394**	**2 513**	**6.07**	**3 912**	**9.45**
UWC	**36 842**	**-717**	**-1.95**	**485**	**1.32**
Wits	63 427	303	0.48	-1 308	-2.06
UZ	**21 567**	**-789**	**-3.66**	**2 259**	**10.48**
MUT	**14 684**	**1 438**	**9.79**	**749**	**5.10**
Total	**1 018 191**	**0**		**0**	

Note: The number of TIUs for each scenario/model was scaled to the TIUs of the base case/base scenario (Contact = 1 018 191)

Table 44: The change in TIUs for each university for the two scenarios/models (distance education institutions)

University	Distance				
	Base case	Model 1		Model 2	
		CESM 06: From 2 to 3 CESM 04: From 2 to 1 CESM 08: From 3 to 4		Same as Model 1 + collapsing funding groups 2 & 3 Weights: 1, 2.5, 3	
	Actual TIU 2010	Δ TIU	Change (%)	Δ TIU	Change (%)
CPUT	33.82	2.70	7.99	-3.48	-10.29
UCT	0.00	0.00		0.00	
CUT	165.33	-9.73	-5.89	-13.10	-7.92
DUT	0.00	0.00		0.00	
UFH	**0.00**	**0.00**		**0.00**	
UFS	1 241.27	-114.44	-9.22	-104.92	-8.45
UJ	0.00	0.00		0.00	
UKZN	2 870.04	-67.49	-2.35	-327.62	-11.42
UL	**0.00**	**0.00**		**0.00**	
NMMU	762.32	64.79	8.50	19.78	2.59
NWU	8 702.57	935.93	10.75	1 149.01	13.20
UP	4 033.46	322.19	7.99	170.33	4.22
RU	0.00	0.00		0.00	
UNISA	123 724.14	-1 184.56	-0.96	-923.55	-0.75
SU	0.00	0.00		0.00	
TUT	637.27	50.60	7.94	33.54	5.26
VUT	0.00	0.00		0.00	
Univen	**0.00**	**0.00**		**0.00**	
WSU	**0.15**	**0.01**	**7.99**	**0.01**	**4.24**
UWC	**0.00**	**0.00**		**0.00**	
Wits	0.00	0.00		0.00	
UZ	**0.00**	**0.00**		**0.00**	
MUT	**0.00**	**0.00**		**0.00**	
Total	**142 170.00**	**0.00**		**0**	

Note: The number of TIUs for each scenario/model was scaled to the TIUs of the base case/base scenario (Distance = 142 170)

Table 45: The change in TIUs for each university for the two scenarios/models (total)

University	Total				
	Base case	Model 1		Model 2	
		CESM 06: From 2 to 3 CESM 04: From 2 to 1 CESM 08: From 3 to 4		Same as Model 1 + collapsing funding groups 2 & 3 Weights: 1, 2.5, 3	
	Actual TIU 2010	Δ TIU	Change (%)	Δ TIU	Change (%)
CPUT	55 692	1 590	2.85	-385	-0.69
UCT	56 562	-113	-0.20	309	0.55
CUT	19 997	1 704	8.52	987	4.94
DUT	41 929	1 566	3.73	832	1.99
UFH	**18 765**	**-600**	**-3.20**	**1 474**	**7.86**
UFS	51 936	-2 228	-4.29	-1 680	-3.24
UJ	77 997	-4 039	-5.18	-3 064	-3.93
UKZN	74 897	-1 269	-1.69	-1 711	-2.28
UL	**45 127**	**-1 103**	**-2.44**	**-1 760**	**-3.90**
NMMU	40 884	-519	-1.27	-304	-0.74
NWU	63 045	-1 237	-1.96	1 271	2.02
UP	98 889	2 120	2.14	-1 575	-1.59
RU	15 197	-523	-3.44	680	4.47
UNISA	124 407	-1 192	-0.96	-513	-0.41
SU	68 121	-463	-0.68	-1 697	-2.49
TUT	75 962	1 998	2.63	138	0.18
VUT	33 386	2 098	6.28	650	1.95
Univen	**19 657**	**-537**	**-2.73**	**251**	**1.28**
WSU	**41 394**	**2 513**	**6.07**	**3 912**	**9.45**
UWC	**36 842**	**-717**	**-1.95**	**485**	**1.32**
Wits	63 427	303	0.48	-1 308	-2.06
UZ	**21 567**	**-789**	**-3.66**	**2 259**	**10.48**
MUT	**14 684**	**1 438**	**9.79**	**749**	**5.10**
Total	**1 160 362**	**0**	0.00	**0**	0.00

Table 46: Amounts needed to offset declines in subsidy allocations to universities as a result of the two scenarios/models

University	Total	
	Model 1	Model 2
	CESM 06: From 2 to 3 CESM 04: From 2 to 1 CESM 08: From 3 to 4	Same as Model 1 + collapsing funding groups 2 & 3 Weights: 1, 2.5, 3
	Estimated financial implications	Estimated financial implications
CPUT	R15 925 440.28	-R 3 883 509.13
UCT	-R1 126 354.20	R 3 092 456.58
CUT	R16 942 312.84	R 9 743 671.39
DUT	R15 657 470.74	R 8 322 931.02
UFH	**-R5 997 517.70**	**R 14 744 042.52**
UFS	-R23 428 794.01	-R 17 853 011.76
UJ	-R40 389 114.11	-R 30 643 051.68
UKZN	-R13 361 301.39	-R 20 385 488.44
UL	**-R11 031 162.79**	**-R 17 604 477.58**
NMMU	-R4 539 385.04	-R 2 844 779.16
NWU	-R3 013 620.62	R 24 196 711.77
UP	R24 423 252.93	-R 14 049 517.84
RU	-R5 227 738.37	R 6 795 905.72
UNISA	-R23 768 171.27	-R 14 367 850.88
SU	-R4 634 012.38	-R 16 970 512.48
TUT	R20 486 745.35	R 1 716 233.45
VUT	R20 976 647.43	R 6 502 847.17
Univen	**-R5 368 369.23**	**R 2 507 570.86**
WSU	**R25 130 779.11**	**R 39 121 138.59**
UWC	**-R7 171 148.30**	**R 4 854 027.90**
Wits	R3 031 405.75	-R 13 075 878.26
UZ	**-R7 894 078.48**	**R 22 591 366.05**
MUT	**R14 376 713.46**	**R 7 489 174.19**
Amount needed to offset declines for individual universities	-R156 950 767.89	-R 151 678 077.21

v. Recommendations

The Committee makes the following recommendations with regard to the teaching input grant and in particular with regard to the funding grid:

1) Rather than distinguishing between undergraduate- and postgraduate-level programmes, it would be easier in future to use actual NQF levels to refer to the different years of study: i.e. Level 1 of study = NQF Levels 5, 6 and 7, Level 2 of study = NQF Level 8, Level 3 of study = NQF Level 9 and Level 4 of study = NQF Level 10.

2) In terms of the funding grid, Model 2 is recommended for implementation, which involves the following changes to the existing grid:

   - CESM 06 moves from funding group 2 to funding group 3.
   - CESM 08 moves from funding group 3 to funding group 4.
   - CESM 04 moves from funding group 2 to funding group 1.
   - Funding groups 2 and 3 are collapsed into the new funding group 2.
   - Funding group 4 becomes the new funding group 3.
   - The new weights for the funding groups become 1 for funding group 1, 2.5 for funding group 2, and 3 for funding group 3.

3) The funding weight for distance offerings at undergraduate and honours levels remain at 0.5.

4) The level weights remain as 1, 2, 3 and 4.

The resulting recommended funding grid is reflected in Tables 47 and 48.

Table 47: Recommended funding grid: Funding groups, by CESM categories

Funding group	CESM categories	Funding ratio at undergraduate level
1	04 business, economics & management studies; 07 education; 12 law; 18 psychology; 19 public administration & services	1
2	02 architecture & the built environment; 05 communication & journalism; 06 computer & information sciences; 10 family ecology & consumer sciences; 11 languages, linguistics & literature; 15 mathematics & statistics; 17 philosophy, religion & theology; 20 social sciences	2.5
3	01 agriculture & agricultural operations; 03 visual & performing arts; 08 engineering; 09 health professions & related clinical sciences; 13 life sciences; 14 physical sciences, 16 military sciences	3

Table 48: Recommended funding grid: Weighting factors for teaching inputs

Funding group	NQF Levels 5, 6 and 7		NQF Level 8		NQF Level 9		NQF Level 10	
	Contact	Distance	Contact	Distance	Contact	Distance	Contact	Distance
1	1.0	0.50	2.0	1.0	3.0	3.0	4	4
2	2.5	1.25	5.0	2.5	7.5	7.5	10	10
3	3.0	1.50	6.0	3.0	9.0	9.0	12	12

5) The HEQSF increased the NQF credits for masters programmes to 180 credits and for doctoral programmes to 360 credits. It is recommended that the formal time for masters programmes be increased to 1.5 and the formal time for doctoral programmes be increased to 3 for HEQSF-approved masters and doctoral programmes, for purposes of calculating subsidy credits. This will, over time, increase the subsidy for these programmes by a third as they are registered on the HEQSF.

vi. General

The work stream noted that the issue around MBA programmes had not yet been resolved. The HEQC proposed that although the MBA may be called a masters degree, the limited nature of the research component in these programmes (most MBAs contain only about 25% research) should be kept in mind. If qualifications are grouped according to NQF levels, this issue will be resolved, since institutions receive the same input funding for coursework and research masters, but different output funding. Coursework masters degrees will be spread across NQF Levels 8 and 9, with only the research component pegged at NQF Level 9.

7.2 Teaching output grant

i. Introduction

The teaching output grant is one of the two major components of the funding framework that is performance driven; it constituted 14.9% of the block grant allocation to universities in 2012/13. The other major component that is performance driven is the research output grant, which constituted 12.8% of the block grant in 2012/13. Previous sections of the current report put forward arguments that these two performance components should receive more

weight in the funding framework. The teaching output grant funds universities for students that have completed their qualifications and is a departure from the SAPSE funding framework that rewarded universities for completed FTEs, which is related to the successful completion of modules. It also differs from the SAPSE funding framework in that it does not give a study field- (CESM-) related weight to the teaching outputs; rather, the funding weight for teaching outputs is related to the duration of the qualification.

Closely related to the teaching output grant is the teaching development grant (which is discussed in the section of the current report that focuses on Teaching Development). The teaching output grant was one of the successes of the new funding framework. In Section 4.3(e) of the current report it is noted that the total graduates grew at an average annual rate of 5.7% compared to the average annual growth rate of 4.9% in headcount enrolments over the period 2000–10. Table 49 (below) shows the growth rates in graduates according to race and gender (2005–10). The total number of African and coloured graduates grew by an average annual rate of 7.1% and 7.8% respectively during the 2005–10 period, compared to the system average of 4.8%. Female graduate numbers also grew faster than male graduate numbers in that time period.

ii. Inputs received from role-players

i. A larger share of the block grant should shift to teaching outputs

a) Various submissions argued that more focus should be placed on outputs by allocating a larger percentage of the funds to teaching and research outputs

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Table 49: Percentage growth rates in graduates, by race and gender (2005–10)

Race and gender	Undergraduate diplomas (%)	Undergraduate degrees (%)	Postgraduate up to masters (%)	Masters (%)	Doctorates (%)	All levels (%)
African female	7.2	8.8	6.7	7.2	9.7	7.6
African male	5.1	7.8	6.6	4.8	9.8	6.3
Indian female	0.5	1.1	4.4	6.6	5.9	2.2
Indian male	-1.1	0.3	1.4	-3.1	4.2	0.0
Coloured female	7.1	9.2	14.5	4.0	5.5	9.4
Coloured male	2.6	7.1	8.1	-1.6	2.3	5.2
White female	-4.7	0.3	3.2	-0.7	-0.9	0.5
White male	-3.0	1.0	0.8	-3.8	0.1	-0.1
Total	**5.3**	**4.8**	**5.1**	**1.2**	**6.5**	**4.8**
Total female	6.2	4.9	5.8	2.8	2.4	5.4
Total male	3.8	4.6	4.0	-0.1	4.3	3.8
Total African	6.5	8.4	6.7	5.8	9.8	7.1
Total Indian	-0.2	0.8	3.2	1.7	5.0	1.3
Total coloured	5.3	8.4	12.2	1.2	3.6	7.8
Total white	-3.9	0.6	2.2	-2.3	-0.4	0.2

Source: DHET (2012e)

ii. Teaching output units should be weighted for the field of study

a) Teaching output units (TOUs) should be weighted for the field of study, similar to the weights applied for TIUs. A possible weighting mechanism was put forward that would add a weight to TOUs based on the composite of the following: the adjusted HEMIS subsidy credits of the courses that were successfully completed, and a weight for the CESM category of the courses that were successfully completed. This weight would be in addition to the weight given related to the formal time of the qualification. The argument is based on the fact that the SAPSE outputs were grid weighted, and the change in the current funding framework to qualifications as the measure of output was not accompanied by a grid weight. It has also been noted that the fact that the new funding framework did not weight qualifications according to the grid was the cause of the current financial difficulties experienced by faculties with course offerings in the higher funding grid levels. The following formula present this proposal:

Let the qualification weight be g

Let minimum formal time for each qualification be t

Let each recognised completed instructional offering counted towards a qualification have an adjusted HEMIS credit value of h

Let each instructional offering with credit value of h be in CESM (third order) and c be the grid weight of that CESM c

Then for each qualification g and each qualifying student the TOU would be weighted by Σ

Where n is the number of completed, recognised instructional offerings completed by this qualifying student

Let qualification factor be g (e.g. g=1.5 for a three-year bachelor degree) g

Let minimum formal time for each g be t

Let each module completed have an adjusted HEMIS credit value of h

CESM grid factors. (SAPSE 110 outputs were grid weighted, and the change to qualifications as the measure of output was not accompanied by a grid weight.)

Let each module with credit value of h be in CESM (third order) and c

c be the grid weight for that CESM

Then for each qualification g and each student record

TOU weight

$$= \frac{\sum_{i=1}^{n} h_i c_i g}{2t}$$

Where i1-n collects all completed instructional offerings for this student in the collection year.

b) This additional weight will become increasingly necessary if a larger portion of the funding is channelled towards teaching output funding.

iii. Proposals related to the difference in funding between the coursework component of taught masters and research masters output units

a) Universities were requested to comment on the fact that the coursework component of taught masters degrees attracts substantially less funding than the research component when a student graduates. The funding for the research component is currently 12.6 times higher than the funding for the coursework component.

b) Various proposals were put forward by the universities in this regard:

Whereas this disparity may be defended on the basis of the importance of the research part of the masters degree, the size of this disparity should be reduced. A ratio that more accurately and reasonably reflects the relative differences of the size of the research component between the categories of degrees should be adopted in principle; and this would also have the effect of improving retention, throughput and completion of the taught masters. The coursework component of the masters degree requires proportionally similar investment of resources.

The case for higher levels of output funding for the coursework component of a masters degree was also argued on the basis of the impact on the number of people with advanced degrees available to industry, government and so on, where research skills and abilities are not a high priority. Advanced specialised knowledge, however, is in high demand. The low funding on the output side has led to a drift towards increased numbers of full research degrees.

c) Various universities supported the status quo, agreeing that the ratio of 12.6 for the research component versus the coursework component of a masters graduate is justified. The generation of new ‘state-of-the-art’ knowledge is mainly acquired through research (by individuals and research teams), and its impact on the development of science and technology within a country is much higher than that of the taught component of the qualification. It was also argued that masters degrees should largely be achieved through research or at least significant components of research. In terms of this argument, it is thus important to increase the support for research-based degrees at the expense of the coursework component.

Table 50: Suggested weights for the non-HEQSF-aligned qualifications that are in the process of being phased out

Qualification type	Current weighting factor	Proposed UCT	Proposed UFS	Proposed UKZN	Proposed NMMU	Proposed UP	Proposed SU	Proposed WSU	Proposed UZ
First certificates and diplomas of two years or less	0.5	0.3 (certificate) 0.5 (diploma)				0.25 (one-year) 0.50 (two-year)		0.3 (one year) 0.6 (two year)	
First diplomas and bachelor degrees of three years	1.0		1.50			0.75 (diploma) 1.00 (degree)			
Professional first bachelor degree of four years or more	1.5		1.75			1.5 (up to four years) 2.0 (more than four years)			
Postgraduate and post-diploma diplomas	0.5								1.0
Postgraduate bachelor degrees	1.0								
Honours degrees/higher diplomas	0.5	1.0	0.75		0.5 (higher diplomas) 1.0 (honours degrees)	1.0			1.0
Non-research masters degrees and diplomas	0.5	1.0	0.75	0.75		1.0	1.0		

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Note: No changes were proposed by the following universities: CPUT, CUT, DUT, UFH, UJ, UL, NWU, RU, UNISA, TUT, VUT, Univen, UWC, Wits, MUT.

Table 51: Suggested weights for the HEQSF-aligned qualifications that are being introduced

Qualification type	UCT	DUT	UFH	UFS	UJ	UL	NMMU
Higher certificate (minimum total credits 120)	0.3	0.50	0.4	0.50	0.5		0.50
Advanced certificate (minimum total credits 120)	0.3	0.50	0.4	0.50	0.5		0.50
Diploma (minimum total credits 240)	0.5	0.75	0.8	1.50	1.0		0.75
Diploma (minimum total credits 360)	1.0	1.00	1.0	1.50	1.5	1.0	1.00
Advanced diploma (minimum total credits 120)	0.3	0.50	0.4	1.00	0.5	0.5	0.50
Bachelor degree (minimum total credits 360)	1.0	1.00	1.0	1.50	1.5	1.0	1.00
Bachelor degree (minimum total credits 480)	2.0	1.00	1.5	1.75	2.0	1.5	1.50
Bachelor honours degree (minimum total credits 120)	1.0	0.50	0.5	0.75	0.5	0.5	0.75
Postgraduate diploma (minimum total credits 120)	1.0	0.50	0.5	1.00	0.5	0.5	0.50
Masters degree (general) (minimum total credits 180) coursework component	0.5 x (coursework credits) / (total credits)	0.50	0.5	1.00	1.0	0.5	1.50
Masters degree (professional) (minimum total credits 180) coursework component	0.75 x (coursework credits) / (total credits)	0.50	0.5	1.00	1.0	1.0	1.50

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 51 (*continued*): Suggested weights for the HEQSF-aligned qualifications that are being introduced

Qualification type	UP	UNISA	SU	TUT	Univen	VUT	WSU
Higher certificate (minimum total credits 120)	0.33	0.2	120	0.50	0.50	0.5	0.50
Advanced certificate (minimum total credits 120)	0.50	0.2	120	0.50	0.50	0.5	0.50
Diploma (minimum total credits 240)	0.75	0.8	240	0.75	1.00	0.5	1.00
Diploma (minimum total credits 360)	1.00	1.2	360	1.00	1.50	1.0	1.50
Advanced diploma (minimum total credits 120)	1.00	0.2	120	0.50	0.75	0.5	0.50
Bachelor degree (minimum total credits 360)	1.75	1.2	360	1.00	2.00	1.0	1.50
Bachelor degree (minimum total credits 480)	1.75 and 2.00*	1.6	480	1.50	2.50	1.5	1.75
Bachelor honours degree (minimum total credits 120)	1.00	0.2	120	0.50	1.00	0.5	0.50
Postgraduate diploma (minimum total credits 120)	1.00	0.2	120	0.50	1.00	0.5	0.40
Masters degree (general) (minimum total credits 180) coursework component	1.50	0.4	180	0.75	1.50	0.5	1.00
Masters degree (professional) (minimum total credits 180) coursework component	1.50	0.4	180	0.75	1.50	0.5	

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire
Note: * The university put forward two possibilities here.

Table 51 (*continued*): Suggested weights for the HEQSF-aligned qualifications that are being introduced

Qualification type	Wits	UZ	MUT
Higher certificate (minimum total credits 120)	0.50	0.5	0.50
Advanced certificate (minimum total credits 120)	0.50	0.5	0.50
Diploma (minimum total credits 240)	1.00	1.0	0.75
Diploma (minimum total credits 360)	1.50	1.0	1.00
Advanced diploma (minimum total credits 120)	0.50	1.0	0.50
Bachelor degree (minimum total credits 360)	1.50	1.0	1.00
Bachelor degree (minimum total credits 480)	2.00	1.5	1.50
Bachelor honours degree (minimum total credits 120)	0.50	1.5	0.50
Postgraduate diploma (minimum total credits 120)	0.50	1.5	0.50
Masters degree (general) (minimum total credits 180) coursework component	0.75	1.5	
Masters degree (professional) (minimum total credits 180) coursework component	0.75	1.5	

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Note: No changes were proposed by the following universities: CPUT, CUT, UKZN, NWU, RU, UNISA, UWC.

iv. Proposals with regard to changes to the teaching output weights for various qualification types

a) Universities were invited to provide suggestions with regard to the current teaching output weights as well as proposals with regard to the HEQSF-aligned qualifications. The feedback received is summarised in Tables 50 and 51 (above, the latter is a three-part table).

iii. Recommendations

The Committee made the following two recommendations with regard to changes to the teaching output weights:

a) An error that occurred with regard to the B Tech qualifications during the implementation of the funding framework must be corrected. The B Tech was classified in the category of professional first bachelor degree: four years or more and given an output weight of 1.5, while all B Tech degrees offered in the system have a formal time of one (except for one B Tech degree that has an actual formal time of four). It is recommended that B Tech degrees be separated out as a category and given a weight of 0.5. The B Tech with a formal time of four should be retained in the category of professional first bachelor degree: four years or more and retain an output weight of 1.5.

b) Based on the proposals received, the following revised funding weights for both contact and distance teaching output programmes that are in the process of being phased out are recommended (Table 52):

Table 52: Funding weights for contact and distance teaching output programmes

Qualification type	Weighting factor
First certificates and diplomas of one year	0.25
First certificates and diplomas of two years	0.50
First diplomas and bachelor degrees of three years	1.00
B Tech degrees of one year	0.50
Professional first bachelor degree of four years	1.50
Professional first bachelor degree of more than four years	2.00
Postgraduate and post-diploma diplomas	0.50
Postgraduate bachelor degrees	1.00
Higher diplomas	0.50
Honours degrees	0.50
Non-research masters degrees and diplomas	0.75

c) The funding weights for both contact and distance education programmes shown in Table 53 (below) are recommended for the HEQSF-aligned qualifications that are being introduced.

Table 53: Funding weights for HEQSF-aligned qualifications that are being introduced

Qualification type	Weighting factor
Higher certificate (minimum total credits 120)	0.50
Advanced certificate (minimum total credits 120)	0.50
Diploma (minimum total credits 240)	1.00
Diploma (minimum total credits 360)	1.50
Advanced diploma (minimum total credits 120)	0.50
Bachelor degree (minimum total credits 360)	1.50
Bachelor degree (minimum total credits 480)	2.00
Bachelor honours degree (minimum total credits 120)	0.50
Postgraduate diploma (minimum total credits 120)	0.50
Masters degree (general) (minimum total credits 180) coursework component	0.75
Masters degree (professional) (minimum total credits 180) coursework component	0.75

Modelling of proposed changes to teaching output weights

The Committee's two recommendations with regard to changes to the teaching output weights were modelled to assess the impact on individual universities. In the relevant columns of Tables 54–56 the base scenario as well as the outcomes of recommendations a) and b) are shown. The base case/base scenario represents the actual TOUs of 2010 against which the other scenarios can be gauged. Recommendation (a) is the weight of the B Tech (one-year) qualification adjusted from 1.5 to 0.5. Recommendation (b) is the new weights for all outputs (see Table 53 above).

Table 54: Actual TOUs as a result of recommendations (a) and (b)

University	Base case		Recommendation (a)		Recommendation (b)	
			B Tech (one-year) weighted 0.5		New weights for all outputs	
	Actual TOU 2010	TOU 2010 (%)	TOU	TOU (%)	TOU	TOU (%)
CPUT	8 168	6.08	6 150	5.00	5 737	4.85
UCT	4 943	3.68	4 943	4.02	5 177	4.37
CUT	2 605	1.94	1 933	1.57	1 838	1.55
DUT	6 310	4.70	4 624	3.76	4 549	3.84
UFH	**2 268**	**1.69**	**2 268**	**1.84**	**2 243**	**1.89**
UFS	4 269	3.18	4 269	3.47	4 243	3.58
UJ	9 438	7.03	8 332	6.77	8 121	6.86
UKZN	6 392	4.76	6 392	5.20	6 395	5.40
UL	**3 437**	**2.56**	**3 437**	**2.79**	**3 322**	**2.81**
NMMU	4 838	3.60	4 257	3.46	4 071	3.44
NWU	10 550	7.86	10 550	8.58	9 105	7.69
UP	10 186	7.59	10 186	8.28	9 879	8.34
RU	1 543	1.15	1 543	1.25	1 546	1.31
UNISA	20 685	15.41	18 993	15.44	17 474	14.76
SU	5 433	4.05	5 410	4.40	5 625	4.75
TUT	10 892	8.11	8 493	6.90	8 072	6.82
VUT	3 492	2.60	2 662	2.16	2 652	2.24
Univen	**2 875**	**2.14**	**2 875**	**2.34**	**2 786**	**2.35**
WSU	**3 634**	**2.71**	**3 442**	**2.80**	**3 301**	**2.79**
UWC	**3 133**	**2.33**	**3 136**	**2.55**	**3 060**	**2.58**
Wits	5 165	3.85	5 165	4.20	5 274	4.45
UZ	**2 399**	**1.79**	**2 399**	**1.95**	**2 382**	**2.01**
MUT	**1 619**	**1.21**	**1 560**	**1.27**	**1 560**	**1.32**
Total	**134 272**	**100.00**	**123 015**	**100.00**	**118 413**	**100.00**

Table 55: Teaching outcome allocations (TOUs) as a result of recommendations (a) and (b)

University	Base case	Recommendation (a)		Recommendation (b)	
		B Tech (one-year) weighted 0.5		New weights for all outputs	
	(R'000)	(R'000)	Difference	(R'000)	Difference
CPUT	R154 346	R126 829	-R18 749	R122 926	-R31 420
UCT	R93 395	R101 941	R3 893	R110 919	R17 525
CUT	R49 217	R39 862	-R5 732	R39 373	-R9 845
DUT	R119 225	R95 362	-R14 028	R97 469	-R21 755
UFH	**R42 858**	**R46 779**	**R3 776**	**R48 069**	**R5 211**
UFS	R80 673	R88 055	R2 943	R90 920	R10 247
UJ	R178 327	R171 834	-R4 133	R174 009	-R4 317
UKZN	R120 785	R131 837	R11 103	R137 024	R16 239
UL	**R64 936**	**R70 878**	**R6 394**	**R71 170**	**R6 234**
NMMU	R91 416	R87 798	-R2 109	R87 215	-R4 201
NWU	R199 349	R217 590	R11 635	R195 073	-R4 276
UP	R192 458	R210 069	-R6 945	R211 672	R19 214
RU	R29 155	R31 823	R739	R33 130	R3 974
UNISA	R390 854	R391 723	-R7 276	R374 405	-R16 449
SU	R102 661	R111 570	R2 271	R120 521	R17 859
TUT	R205 803	R175 157	-R13 913	R172 958	-R32 845
VUT	R65 973	R54 892	-R5 608	R56 816	-R9 157
Univen	**R54 319**	**R59 290**	**R8 229**	**R59 690**	**R5 371**
WSU	**R68 667**	**R70 980**	**R7 112**	**R70 729**	**R2 062**
UWC	**R59 194**	**R64 683**	**R4 659**	**R65 571**	**R6 377**
Wits	R97 587	R106 516	R4 512	R113 009	R15 422
UZ	**R45 330**	**R49 478**	**R7 068**	**R51 026**	**R5 696**
MUT	**R30 582**	**R32 164**	**R4 159**	**R33 414**	**R2 832**
Total	**R2 537 108**	**R2 537 108**	**0**	**R2 537 108**	**0**

Note: The number of TOUs for each scenario was scaled to the TOUs of the base scenario.

Table 56: Change in TOUs for each university based on recommendations (a) and (b)

University	Base case	Recommendation (a)		Recommendation (b)	
		B Tech (one-year) weighted 0.5		New weights for all outputs	
	Actual TOU 2010	Δ TOU	Change (%)	Δ TOU	Change (%)
CPUT	8 168	-1 456	-17.83	-1 663	-20.36
UCT	4 943	452	9.15	927	18.76
CUT	2 605	-495	-19.01	-521	-20.00
DUT	6 310	-1 263	-20.02	-1 151	-18.25
UFH	**2 268**	**208**	**9.15**	**276**	**12.16**
UFS	4 269	391	9.15	542	12.70
UJ	9 438	-344	-3.64	-228	-2.42
UKZN	6 392	585	9.15	859	13.44
UL	**3 437**	**314**	**9.15**	**330**	**9.60**
NMMU	4 838	-191	-3.96	-222	-4.60
NWU	10 550	965	9.15	-226	-2.14
UP	10 186	932	9.15	1 017	9.98
RU	1 543	141	9.15	210	13.63
UNISA	20 685	46	0.22	-871	-4.21
SU	5 433	472	8.68	945	17.40
TUT	10 892	-1 622	-14.89	-1 738	-15.96
VUT	3 492	-586	-16.80	-485	-13.88
Univen	**2 875**	**263**	**9.15**	**284**	**9.89**
WSU	**3 634**	**122**	**3.37**	**109**	**3.00**
UWC	**3 133**	**290**	**9.27**	**337**	**10.77**
Wits	5 165	473	9.15	816	15.80
UZ	**2 399**	**220**	**9.15**	**301**	**12.57**
MUT	**1 619**	**84**	**5.17**	**150**	**9.26**
Total	**134 272**	**0**		**0**	

d) Although the Committee agrees that in principle it would be ideal if funding could be distributed equally between teaching input and teaching output grants, *much more equity in the system needs to be achieved before a much higher percentage of the funding could be channelled towards teaching outputs*.

Note: Once the system has developed to such an extent that more funding can be channelled towards teaching outputs, it will become necessary to attach weight to the

teaching outputs. Due to the fact that the movement towards a higher proportion of funding going towards teaching output units will result in a loss on the teaching input side of the weights for the CESM-based funding groups, the output units will have to be weighted to ensure that high-cost programmes are appropriately funded. The proposal made in ii (above), could be used (namely: *each course of the qualification that is completed should receive a funding weight*). Alternatively, the outputs could be proportionally weighted on the basis of the one to four major areas linked to the qualification in the 'QUAL' file in HEMIS. The proposal in ii (above) might prove to be too complicated, due to course code and course name changes as well as changes in the actual credits and adjusted credits of a course over time.

g) The Committee also recommends that portions of the teaching development fund be set aside to support the following two innovations:

- The collaborative development of learning resources in areas of national importance that will be made available to all institutions as *open educational resources (OER)*.
- Action research into the use of *digital technology for quality, cost-effective teaching and learning in the South African context.*

7.3 Distance education/open and distance learning (ODL)

i. Introduction

The Green Paper for Post-school Education and Training (DHET 2012d) sets targets for the expansion of the university sector to reach 1.5 million students by 2030. This sets the goal at 67% headcount growth over 2011 provision. In order to meet this challenge, South Africa will need to move away from reliance on traditional models of provision with heavy requirements of 'bricks and mortar' to a learning system based on open learning principles, where quality educational environments are designed to achieve the educational purpose using the most appropriate and cost-effective technologies available. (Technology in this context does not refer only to the new, digital technologies.) Education White Paper 1 (DoE 1995) defines open learning as an approach that combines the following principles: learner centredness, lifelong learning, flexibility of learning provision, the removal of barriers to accessing learning, the recognition for credit purposes of prior learning experience, the provision of learner support, the construction of learning programmes in the expectation that learners can

succeed, and the maintenance of rigorous quality assurance over the design of learning materials and support. Such educational environments need to take into account the life circumstances of the learner.

Internationally, the growing use of digital technologies is beginning to have a dramatic effect on the nature of teaching and learning at universities. These technologies make possible a wide range of new teaching methods for both traditional face-to-face and distance education, with the likely effect that traditional lecture-based provision and entirely print-based distance education may become phenomena of the past. In South Africa, this change is at an early stage, but with the increasing availability of bandwidth and the lowering of the price of connectivity and digital devices, change is sure to accelerate. Funding arrangements will need to be adapted on the basis of accumulating empirical evidence.

Within the open learning system, given international evidence that distance education can, under certain conditions, provide high-quality educational opportunity more cost-efficiently and cost-effectively than traditional face-to-face provision (Rumble 2012), distance education/open and distance learning (ODL) will be a major contributor to the envisaged growth of the university system. However, as the recent draft distance education policy for the university sector (DHET 2012b) makes clear, any growth in this area must occur in an orderly manner, where increases in access need to be of a quality nature and result in commensurate increases in student success.

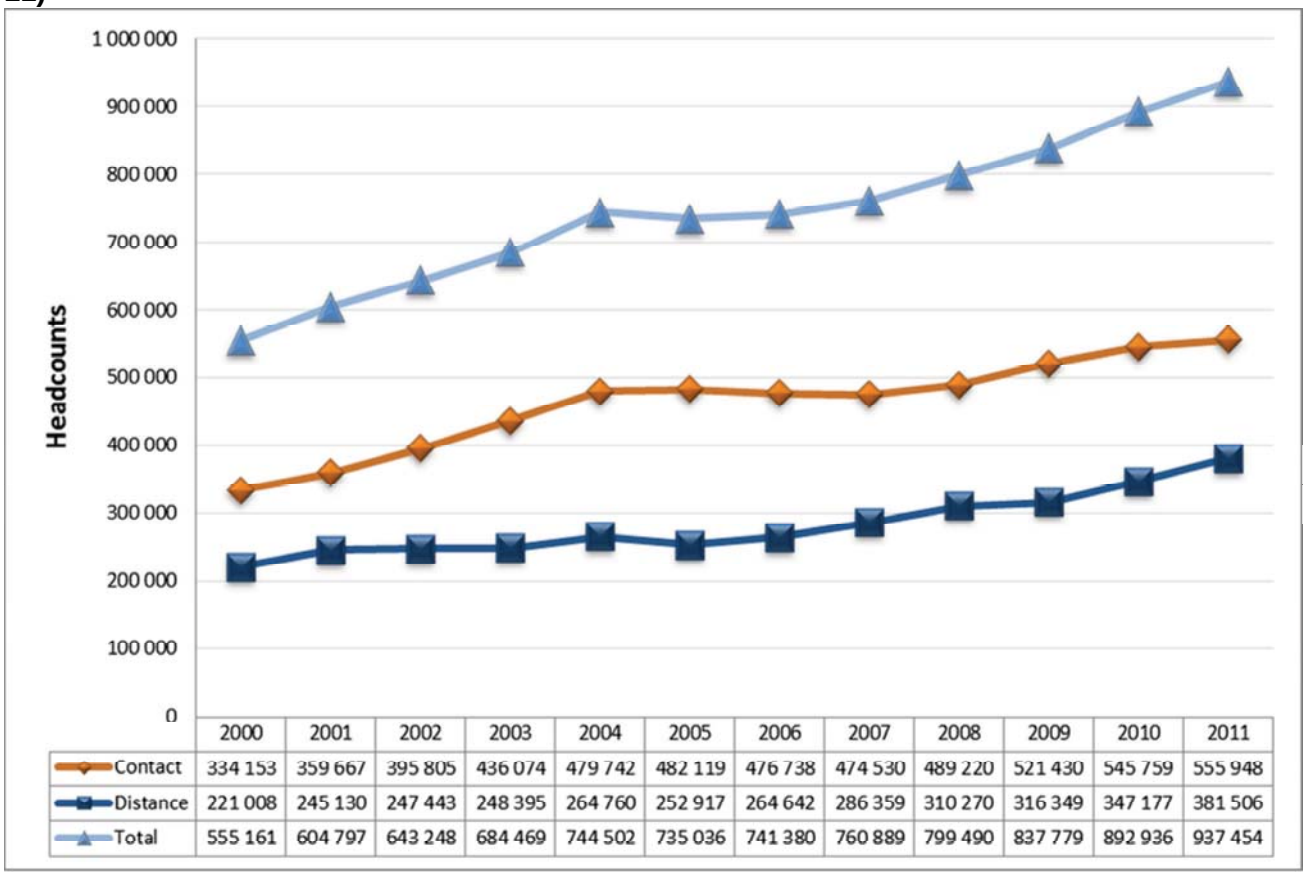
ii. Current distance education provision

Figure 16 (below) demonstrates that provision for students at ‘a distance’ has been a key contributor to South Africa’s growing university system, rising to account for nearly 40% of headcount enrolment over the 10-year period 2000–11.

Given that the majority of distance education enrolments are for part-time study, the proportion of FTE ‘distance’ students (around 29% for the past five years – see Table 57 and Figure 17) is not as high as that of distance headcount enrolments. The proportion of FTE degree credits (around 25% for the past five years) acquired by distance education students,

as well as the proportion of graduates (25%) taught through distance, is just below the proportion of distance FTEs.

Figure 16: University headcount enrolment: Contact versus distance learning (2000–11)

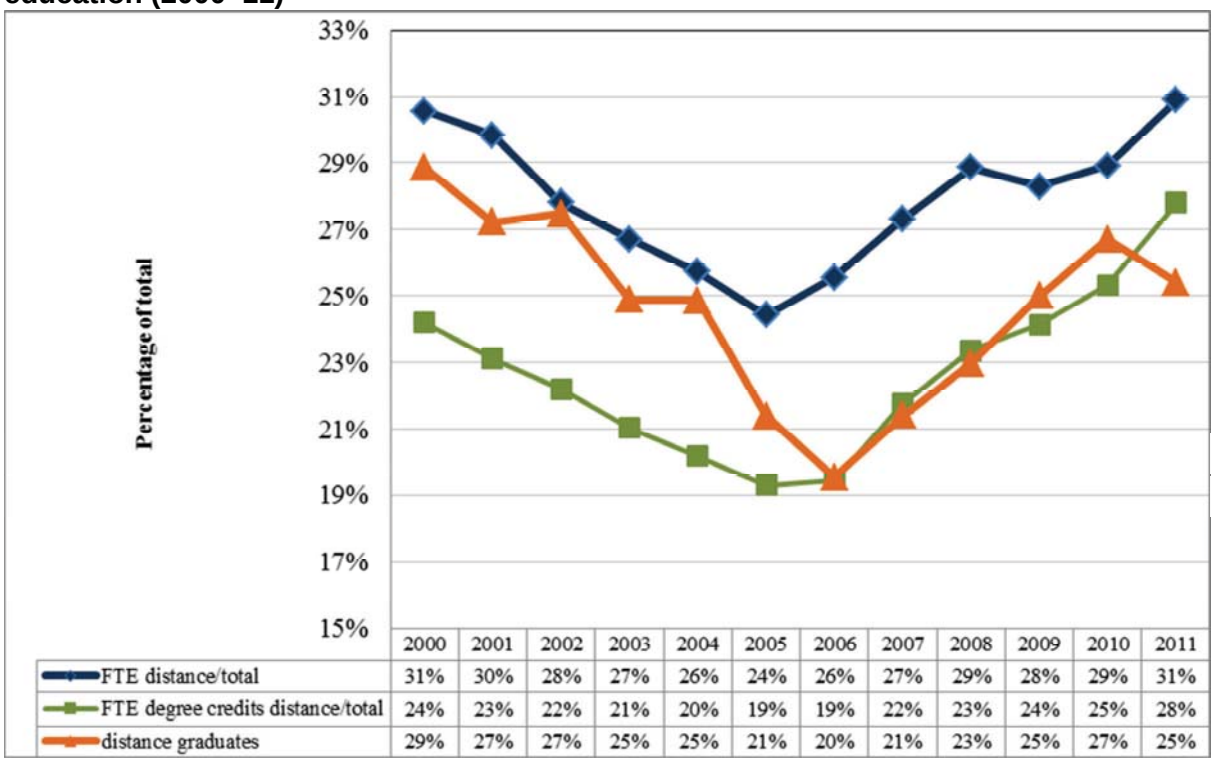


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Contact	334 153	359 667	395 805	436 074	479 742	482 119	476 738	474 530	489 220	521 430	545 759	555 948
Distance	221 008	245 130	247 443	248 395	264 760	252 917	264 642	286 359	310 270	316 349	347 177	381 506
Total	555 161	604 797	643 248	684 469	744 502	735 036	741 380	760 889	799 490	837 779	892 936	937 454

Source: DHET (2012e)

Graduates who have studied through distance education are largely in undergraduate diplomas and certificates (around half), undergraduate degrees (around a quarter) and postgraduate/post-diploma certificates (6%–7%) and honours degrees (around 18%).

Figure 17: Proportion of university FTEs, FTE credits and graduates: Distance education (2000–11)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
FTE distance/total	31%	30%	28%	27%	26%	24%	26%	27%	29%	28%	29%	31%
FTE degree credits distance/total	24%	23%	22%	21%	20%	19%	19%	22%	23%	24%	25%	28%
distance graduates	29%	27%	27%	25%	25%	21%	20%	21%	23%	25%	27%	25%

Source: DHET (2012e)

Table 57: Institutional share of headcount enrolment: Distance education (2010 and 2011)

Institution	2010 (%)	2011 (%)
CUT	0.1	0.1
UFS	0.9	1.2
UKZN	1.9	1.6
NMMU	0.8	0.5
NWU	7.6	6.6
UP	3.8	3.5
UNISA	84.4	86.2
TUT	0.4	0.3

Source: DHET (2012e)

Currently, approximately 86% of distance education headcount enrolment is provided by South Africa's mega-institution, the University of South Africa (UNISA), with other institutions contributing a small percentage of distance provision (see Table 58, below).

This dominance by UNISA may change. The aforementioned draft policy on distance education in universities (DHET 2012b) proposes that current restrictions on traditionally face-to-face institutions offering distance education be relaxed to allow any public or private university to offer distance education programmes, provided that the latter accord with the university's PQM and that certain quality criteria are met. At least four predominantly face-to-face universities could be well placed to expand their distance education offerings.

Table 58: Provision as a share of total institutional headcount enrolment: Distance education (2010 and 2011)

Institution	2010 (%)	2011 (%)
CUT	2.4	2.2
UFS	11.9	15.1
UKZN	16.0	15.0
NMMU	10.2	7.3
NWU	47.5	44.1
UP	22.9	23.0
UNISA	99.8	100.0
TUT	2.9	2.1

Source: DHET (2012e)

In order to meet the targets set for expansion as indicated in the Green Paper for Post-school Education and Training (DHET 2012d), the Ministry has signalled its intention to increase distance education enrolment at universities.

In favour of this course of action is that distance education has demonstrated its ability to create increased access to university education for a very wide range of learners – from those with adult responsibilities of work or home care, through those with disabilities, to younger learners who cannot afford face-to-face tuition or who may prefer the flexibility of distance study. Also in its favour is that distance education is currently less costly for *both* the student and the state. From a student perspective, the total fees for a programme through distance education provision are approximately half those of 'contact' provision. An

added advantage is that distance education students generally do not relocate to a different environment to engage in their studies, and often do not need residential accommodation. From a state perspective, the input subsidy for a distance education enrolment for an undergraduate or lower postgraduate programme is currently half that of a face-to-face enrolment.

The more complex issue is determining whether the success rate of distance education students complements this 'saving' in order to make distance education both a cost-efficient and a cost-effective option.

iii. Funding issues in distance education

The draft distance education policy for universities (DHET 2012b) raises a number of issues for consideration in respect of funding, and these are itemised below:

- Teaching output funding for different modes of provision.
- Teaching input funding for accredited qualifications at masters and doctoral level for different modes of provision.
- The current distance education input subsidy being 50% of that of contact institutions.
- Only giving input subsidy for active students.
- Rewarding distance education contributions to students' completion of qualifications awarded by other institutions.
- Financial incentives for completing qualifications.
- Difficulties in meeting enrolment targets exactly.
- The case of low enrolment distance education niche programme to address a national need.
- NSFAS support for distance education students.
- The costs of the ICT infrastructure necessary for distance education.

iv. But first, what constitutes distance education?

Generally, distance education is taken to mean teaching and learning in which the educator and the student are removed from each other in time and/or space. The definition is an issue highlighted in the HESA response to the *Draft Policy Framework for the Provision of*

Distance Education in Universities in South Africa (DHET 2012b), as well as in some of the responses of eight other institutions. HESA favours the notion articulated in a CHE publication in 2004 – of a continuum, from purely face-to-face (contact) tuition through to education purely at a distance, the latter traditionally conceptualised as correspondence tuition with no face-to-face interaction between teachers and learners.

> The reality is that all educational provision exists somewhere on this continuum, but cannot be placed strictly at either pole. The continuum of education provision can be used to describe a range of educational practice, on which educational provision can be located based on its mix of methods. The greater use there is of educational methods that assume temporal and/or spatial separation between students and educators, the more this provision will tend towards the distance education pole of the continuum. The more direct contact between educators and learners, the more it will tend towards the face-to-face pole. (CHE 2004a: 28)

This notion of a continuum is particularly useful in suggesting that there is not a single model for either contact or for distance education. This is well described in a UNESCO publication (2004):

> …both distance and face-to-face education are labels covering a wide range of variations and methods. Face-to-face education may vary from one-to-one tutorials, group activities, seminars and classroom teaching to lectures for large audiences. In each case different educational philosophies may be applied and different methods may be used. Face-to-face education may be supported by a range of media, and may be combined with periods of independent study. In a similar way, distance education has a variety of forms, according to the underlying educational philosophy, organizational approach and choice of technology, and distance educators may incorporate into their programmes an element of face-to-face teaching. (UNESCO 2004: 23)

One way of dealing with this complexity in determining what is and is not distance education is to concentrate on the spatial separation between student and educator. This has been the practice of the DHET for funding purposes. The Committee recommends that this practice continue, as spatial distance is the major differentiator between the different modes.

However, the increasing use of digital technology in the provision of higher education adds complexity. Technology can be used to support contact tuition as well as tuition for students who are geographically separated (or distributed). In order to locate the different delivery models, the ‘delivery’ grid shown in Diagram 10 (below) has been developed by the South

African Institute for Distance Education (SAIDE) based on the interplay of spatial distance/remoteness on the one hand and extent of use of technology on the other (SAIDE 2012). SAIDE notes further:

> In addition to the spatial and technological dimensions illustrated above, a third (human) dimension needs to be considered, across all forms of provision – although this will be too complex for funding purposes. This dimension is the underpinning educational approach and the extent to which this is fit for purpose in terms of the target audience, the purpose and level of the course being offered, as well as the extent to which an equivalent learning experience is offered across different contexts of learning and practice. Although they use different terms, educational theorists for the past 100 years or so have consistently argued that deep, meaningful learning requires active student engagement including interactions between students and content, students and other students, students and faculty and, when appropriate, students and workplaces and/or communities. A diverse range of technologies are now available to enable this but they need to be selected and utilised purposefully for this potential to be realised. (SAIDE 2012: 9)

In the light of the above complexity, the Committee recommends that, for funding purposes only, all modes of provision at NQF Levels 4–8 – including mixed mode and blended provision – in which students spend 30% or less of the assigned notional learning hours in staff-led and campus-based structured learning activities, should be considered to be distance education.

v. The input subsidy

The central issue in distance education funding is the relative input subsidy allocated to a distance education enrolment. Currently, as already mentioned, a distance education undergraduate or lower postgraduate enrolment receives half the input subsidy of that received by a contact enrolment.

Diagram 10: Mapping different examples of delivery

Online	Fully online	Mostly or fully online curriculum in computer lab or classroom where students meet every day			Fully online curriculum with all learning done online with distant students and no face-to-face component
	Internet-dependent		Students in classes on campus with significant, required online components that extend learning beyond the classroom	Extensive use of materials available through the internet with some contact sessions or tutorials held off campus at a learning centre or local facility	
	Internet-supported	Classroom instruction integrating online resources, but limited or no requirements for students to be online		Print-based resources with online chat rooms and discussion forums for distant students	
Offline	Digitally supported	Traditional face-to-face setting with digitised text, audio and video resources			Correspondence course with CD ROMs as well as print/paper resources
	No digital resources	Traditional face-to-face setting with few or no digital resources or communication		Print-based course with face-to-face tutorial groups at local centres	Correspondence course with no digital resources or communication, for off-campus distributed students
		Campus based			**Remote/off campus**

Distance

Source: SAIDE (2012)

In the submissions made by the universities to the Committee, this issue received attention from some institutions. South Africa's only dedicated distance education university, UNISA,

argued that while the current proportion allocated for the distance education input subsidy was sufficient for “earlier generations” of distance education, “technology supported open and distance learning” requires higher levels of funding.

In its detailed submission, UNISA described how it aims to improve student success and graduation, through enhancing the quality and relevance of academic programmes, providing effective student support and undertaking purposeful tracking of student progress. It also emphasised the importance of deploying digital technology to support students, particularly as such technology enables a range of different communication possibilities.

When questioned, other universities that offer sizeable distance education provision stated that the current input subsidy proportion was adequate. It should be noted, however, that currently provision is largely *print based*, with limited contact- and/or technology-mediated support. There are, as yet, few if any examples of large-scale distance education provision in South Africa premised substantially on internet-based resources and support and/or making use of extensive e-tutorials.

In order to address this central question of different input subsidies for different modes, work stream one liaised with work stream four, which was gathering empirical data on relative costs of provision in relation to CESM category, level of study and mode of delivery. The approach is described in the report of work stream four.

Based on the data gathered, it was decided that the *current* allocation for the *current model of provision* is adequate. For high-volume course enrolments the current allocation is arguably more than adequate. This corroborates the results of eight case studies of undergraduate distance education provision conducted in 2004 as part of a CHE investigation into distance education (CHE 2004b).

vi. Shifts in the models of distance education provision

In considering the shifts in the “distance mode”, as described by UNISA in its presentation to the Committee, from “earlier generations” to “technology-supported open and distance learning”, two sub-shifts emerge, as follows:

- The first refers to moving from an ‘individual lecturer-based’ course and materials design process to a ‘course team’ approach, and from occasional group lectures and tutorial support for a minority of students to far greater support to the student through a comprehensive tutoring system.
- The second refers to embedding digital technology across all aspects of provision.

In the case of UNISA, the manner in which the shift to a comprehensive tutoring system is envisaged is through the use of e-tutors.

There is merit in the argument that programmes implementing the first sub-shift above – of thorough course design and materials development processes, as well as extensive learner support – require considerable resources; certainly far more than in traditional correspondence models. However, the aforementioned CHE (2004b) investigation provides some evidence that, in the South African context, for medium- to high-enrolment modules the first shift can largely be accommodated within the current input subsidy. This is corroborated by the experiences of current distance education provision in South Africa, which has made this shift.

For international evidence of this, we can draw on studies conducted at a time *before* the widespread use of digital technology, when the emphasis was placed on good practice in respect of both course design and mass-media materials development and learner support. The CHE (2004b) reports on these studies as follows:

> A…confidential study, undertaken by the Department for Education and Science in 1991 (in England), compared the cost of (UKOU) degrees with part-time degrees offered by three conventional institutions. It found that a three year FTE degree at the OU costs less than 60% of the average of the other universities. These are impressive statistics, but they are not unique. Other distance universities with similar teaching systems achieve similar rates. For example, the Allama Iqbal Open University in Pakistan, which is modeled on the UKOU, achieves costs per **graduate** that are 45%-70% of the cost of conventional universities. (CHE 2004b: 108; emphasis in original)

From these studies it would seem that the current South African situation, where the distance education input subsidy is 50% of that of contact institutions, may well be acceptable.

However, the cost implications of accommodating the second sub-shift envisaged by UNISA – that is, to the application of digital technology – are more complex from a comparative perspective, for at least the following three reasons:

- Firstly, aside from expensive 3G connectivity, the technological infrastructure is not yet in place for students outside of urban areas.
- Secondly, the cost of connectivity and of access devices, while reducing rapidly, is not yet affordable.
- Thirdly – and in the medium term, most importantly – the use of digital technology for teaching and learning often encourages a move away from the use of mass-media methods to methods where the presence of the academic is required for a considerable proportion of notional learning hours. As such, online facilitation is best done in groups of under 25 people; such a model is likely to cost at least the equivalent of 'contact' education. Indeed, it would clearly be more expensive than contact provision premised on high-enrolment lectures, for example.

To complicate the picture even further, the massive increase in the availability of open educational resources (OER), accompanied by cheaper and widespread availability of enabling technology, is likely to lead to paradigm shifts in the way in which higher education is offered, and may result in reduced costs as academics are able to make extensive use of, or even adapt, high-quality resources developed by others. OER are resources that can be used and, in most cases, can be adapted to purpose without the need to pay any licence fees. Change is therefore what we should come to expect.

Given the above, how should the Committee respond?

The Committee wishes to suggest that given the evidence of current costs of distance education at around half of those of contact education, there should not be a blanket increase in the distance education input subsidy. Applying a blanket increase is likely simply to perpetuate inefficient financial practices, without providing any guarantees of improved quality of delivery.

However, arrangements should be made to ensure that funding provision is made in the immediate future to respond to the developments towards technology-supported open and

distance learning. This should be done on the basis of plans and costing of how these shifts in practice are to be achieved, before additional funding is granted.

In responding to such plans to develop and improve distance education provision, cognisance needs to be taken of the imperative to contain costs as much as possible. Few international benchmarks exist in this changing environment, but of interest are the recent costing exercises conducted in the UK in response to the massive funding changes recently implemented for universities. The UK Open University had developed a model of technology-supported open and distance learning akin to that envisaged by UNISA.[12] The Open University found that the average fee in 2012 at an English university per FTE was £8,354 compared to the Open University's £5,000. This gives a ratio of just less than 5:8, compared to South Africa's half (5:10) for the input subsidy.

However, improving quality and achieving improved module/course and programme cohort throughputs are of paramount importance in the South African context, and realistic assessments need to be conducted to ascertain how these improvements may be achieved cost-effectively and making use of the developing ICT infrastructure. It is therefore suggested that *the DHET initiate comparative studies* over the next few years into the costs of contact education versus technology-supported open and distance learning. Such studies would need to take cognisance of comparative costs per student and cost per graduate – with the caveat that in the case of distance education provision there would need to be allowance made for a longer period towards completion; two to three times the minimum study time is suggested.

vii. Recommendation on the input subsidy

The Committee makes the following recommendations:

a) With regard to the *current differentiation of the distance education input subsidy being 50% of that of contact institutions*, the work stream, in collaboration with work stream four, has gathered data on the relative costs of distance education provision and that of 'contact' provision. The findings demonstrate that the current rate of 50% of the

[12] Email correspondence, 18 June 2012, Sheila King (Office of the Vice-chancellor) at the Open University UK

input subsidy of contact education is commensurate with *current* provision of distance education, and should be retained for the next three to five years.

b) By this stage (three to five years' time) further analysis should have been undertaken of empirical data in the form of costed plans and implementation of the envisaged shifts in distance education practice, and such analysis should highlight whether any addition would need to be made to the input subsidy for distance education. In the meantime, the *funding focus should be on developing the ICT infrastructure for the distance education system as a whole*.

c) With regard to *awarding the input subsidy*, any such subsidy needs to be justified by sufficient evidence of meaningful engagement. Submission of evidence that students are truly 'active' requires that the timing of submission of census data allows for students to have attempted a *meaningful* assessment and/or have engaged in a planned and monitored significant teaching/support initiative.

The remaining issues highlighted by the draft distance education policy (DHET 2012b) are much simpler to respond to, and so the discussion or motivation is contained within each recommendation below.

viii. Recommendations on the remaining issues

The Committee makes the following recommendations:

a) The *principle of parity of funding for teaching outputs* from accredited courses and programmes at all levels *for all modes of provision* should be retained as it validates the accreditation quality assurance processes.

b) The *principle of parity of funding for teaching inputs for all accredited qualifications at masters and doctoral level for all modes of provision* should be retained in recognition that *at this level* there is no significant difference in terms of resource inputs for different modes.

c) With regard to rewarding distance education for the *credits that students achieve* as part of qualifications awarded at other institutions, the extent of this occurrence should be quantified. Should it be found to be material, a mechanism should be found by the DHET to reward UNISA, and any other major contributor, for its contribution.

d) Currently, the *teaching input grant* accounts for more than five times the *output subsidy grant*. For distance education in particular, this provides the incentive to increase access by enrolling large numbers of students (especially as it appears a

simple matter to increase numbers, as the materials already exist and there are no physical space constraints), but *does not provide* sufficient incentive to make the investment in quality teaching and support to ensure success. To guard against this problem, the Ministry should restrict enrolments in any module where there is currently an unacceptable success rate – a minimum module success rate of 50% is suggested. Where any provider, through the approved PQM, offers a *low-enrolment distance education niche programme to address a national need*, cognisance should be taken that such an offering will not benefit from economies of scale, and the input subsidy should be adjusted to 100% of that provided to contact education. Only those that meet very stringent criteria in terms of national interest should qualify for this additional funding.

e) Qualifying distance education students *should continue to receive NSFAS funding*. The Committee adds the recommendation that such students also qualify for support to purchase a computer/notebook/other appropriate electronic device. Consideration should be given to supporting accommodation costs where this is necessary.

7.4 Work-integrated learning and community engagement

i. Introduction

This section focuses on work-integrated learning and community engagement, based on several analyses prepared, submissions by universities, and analysis of questionnaire data on work-integrated learning. The following topics are addressed: work-integrated learning; funding of work-integrated learning; recommendations; and community engagement.

ii. Work-integrated learning

Universities offer many academic programmes that require practice in the profession in order for students to be granted their degrees. This ‘practice in the profession’ is generally referred to as work-integrated learning (WIL) or experiential learning. According to a 2011 CHE publication (2011a), WIL “is used as an umbrella term to describe curricular, pedagogic and assessment practices, across a range of academic disciplines that integrate formal learning and workplace concerns” (CHE 2011a: 4). In this sense, WIL is regarded as an essential feature in the preparation of professionals for the workplace. Considering the diversity of programmes with some form of WIL, it is naturally expected that there would be no singular

approach to WIL. Patrick et al. (2008) and the CHE (2011a) have usefully identified the various forms of WIL. These include the following:

a) Practicum.
b) Professional practice.
c) Internship, workplace learning, work-integrated learning.
d) Industry-based learning.
e) Project-based learning.
f) Co-operative education, fieldwork education.
g) Service learning.
h) Real-work learning.
i) Placements.
j) Experiential learning.
k) Clinical placements, professional placement.

The revised HEQSF of September 2011 describes WIL as a characteristic of vocational and professionally oriented qualifications, and stipulates that it may be incorporated into programmes at all levels of the HEQSF:

> Where WIL is a structured part of a qualification the volume of learning allocated to WIL should be appropriate to the purpose of the qualification and to the cognitive demands of the learning outcome and assessment criteria contained in the appropriate level descriptors. (DoE 2007b: 9)

Where WIL takes the form of workplace learning "it is the responsibility of institutions that offer programmes requiring WIL credits to place students into WIL programmes. Such programmes must be appropriately structured, properly supervised and assessed" (DoE 2007b: 9).

Overall, as explained by the CHE (2011a) and in the study by Patrick et al. (2008: v), WIL is "an umbrella term used for a range of approaches and strategies that integrate theory with the practice of work within a purposefully designed curriculum". WIL is seen by universities not only as a useful pedagogy but also as a means to respond to demands by employers for work-ready graduates, and demands by students for employable knowledge and skills. Thus, WIL is a curricular requirement that students must fulfil before they are deemed to have successfully completed their qualifications.

WIL, in various forms, has always been an essential feature of professional education in South Africa, even if it has not been called 'WIL' (CHE 2011a). Historically, WIL was mainly

offered by technikons, at which time is was referred to as ‘co-operative education’. The technikons tended, however, to defer to the practices and requirements of work and industry, often valuing these over academic disciplines (CHE 2011a). Students participated in WIL while in ‘employment’ at an approved company.

Aside from the useful contributions from the CHE cited above, there is no recent policy on the provision of WIL at South African universities. Ideally, any funding recommendations should have been based on such a policy. It is nevertheless possible to work from the broad approach that all practices of WIL are “based on a common understanding of the importance of enabling students to integrate theoretical knowledge gained through formal study, with the practice-based knowledge gained through immersion in a work or professional context” (CHE 2011a: 4).

In addition to variations in approaches to WIL, duration times vary depending on, inter alia, the structure and requirements of the academic programme concerned. One finds WIL of shorter duration (less than six months) and WIL of longer duration (typically more than six months). Unlike in academic subjects, the length of time allocated to WIL is usually not directly linked to its credit value within an academic subject or programme. For South African universities, the duration of WIL is usually linked to the Total Experiential Time, which is approved and specified in the PQM document for the qualifications offered by the institution. On the other hand, the credits associated with the WIL component of a qualification offered by a higher education institution in South Africa are currently determined by the institution and submitted to the HEQC and the DHET for approval and incorporation in that institution’s PQM. Generally the WIL component comprises approximately a third of the total credit value of a qualification. Tables 59–66 (below) show the range of programmes offered by eight universities (Vaal University of Technology, UNISA, Durban University of Technology, Central University of Technology, Cape Peninsula University of Technology, Nelson Mandela Metropolitan University, Tshwane University of Technology and University of Johannesburg) that have a WIL (or experiential learning) component, and the proportion of the programmes constituted by WIL.

In addition to the range of programmes – most of which are national diplomas – offered by the eight universities, the tables show the minimum experiential time of the listed programmes. In the majority of the programmes, the minimum experiential time is about 33%. There are, however, programmes whose minimum experiential time is as high as 50%; examples include the national higher diplomas offered by Cape Peninsula University of

Technology, and Nelson Mandela Metropolitan University's masters programmes in clinical psychology, counselling psychology, and education. In a few cases, the programme's minimum experiential time is only 6.6% of the entire programme. An example of such a programme is the National Diploma in Office Management and Technology, offered by by Vaal University of Technology.

Table 59: Approved qualifications and majors/fields of specialisation: VUT

Approved qualification title	Qualification type	Minimum times		
		Total	Formal	Experiential
Undergraduate diploma or certificate				
National diploma				
ND: Agricultural Management	23 National Diploma	3	2.2	0.8
ND: Building	23 National Diploma	3	2.5	0.5
ND: Office Management and Technology	23 National Diploma	3	2.8	0.2
ND: Small Business Management	23 National Diploma	3	2.5	0.5
ND: Public Relations Management	23 National Diploma	3	2.5	0.5
ND: Engineering: Computer Systems	23 National Diploma	3	2.0	1.0
ND: Engineering: Chemical	23 National Diploma	3	2.0	1.0
ND: Engineering: Civil	23 National Diploma	3	2.0	1.0
ND: Engineering: Electrical	23 National Diploma	3	2.0	1.0
ND: Engineering: Industrial	23 National Diploma	3	2.0	1.0
ND: Engineering: Mechanical	23 National Diploma	3	2.0	1.0
ND: Engineering: Metallurgy	23 National Diploma	3	2.0	1.0
ND: Biomedical Technology	23 National Diploma	3	2.5	0.5
ND: Hospitality Management	23 National Diploma	3	2.5	0.5
ND: Food Service Management	23 National Diploma	3	2.0	1.0
ND: Analytical Chemistry	23 National Diploma	3	2.5	0.5
ND: Biotechnology	23 National Diploma	3	2.0	1.0
ND: Non-destructive Testing	23 National Diploma	3	2.0	1.0
ND: Tourism Management	23 National Diploma	3	2.5	0.5

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 60: Approved qualifications and majors/fields of specialisation: UNISA

Approved qualification title	Qualification type	Minimum times		
		Total	Formal	Experiential
National diplomas				
ND: Coal Mining	23 National Diploma	3	1.5	1.5
ND: Library and Information	23 National Diploma	3	2.7	0.3
ND: Metalliferous Mining	23 National Diploma	3	1.5	1.5
ND: Mine Surveying	23 National Diploma	3	1.5	1.5
ND: Nature Surveying	23 National Diploma	3	2.0	1.0
ND: Office Management	23 National Diploma	3	2.8	0.2
ND: Public Relations	23 National Diploma	3	2.5	0.5
ND: Pulp and Paper Technology	23 National Diploma	3	3.0	0.0
ND: Real Estate	23 National Diploma	3	2.5	0.5
ND: Surface Mining	23 National Diploma	3	2.5	0.5

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 61: Approved qualifications and majors/fields of specialisation: DUT

Approved qualification title	Qualification type	Minimum times		
		Total	Formal	Experiential
Undergraduate diploma or certificate				
NC: Dental Assistance	21 National Certificate	1	0.7	0.3
National Diploma				
ND: Ecotourism Management	23 National Diploma	3	2.5	0.5
ND: Horticulture	23 National Diploma	3	2.0	1.0
ND: Landscape Technology	23 National Diploma	3	2.0	1.0
ND: Architectural Technology	23 National Diploma	3	2.5	0.5
ND: Building	23 National Diploma	3	2.5	0.5
ND: Town and Regional Planning	23 National Diploma	3	2.0	1.0
ND: Video Technology	23 National Diploma	3	2.5	0.5
ND: Hospitality Management	23 National Diploma	3	2.5	0.5
ND: Small Business Management	23 National Diploma	3	2.5	0.5
ND: Public Relations Management	23 National Diploma	3	2.5	0.5
ND: Engineering: Computer Systems	23 National Diploma	3	2.0	1.0
ND: Engineering: Chemical	23 National Diploma	3	2.0	1.0
ND: Engineering: Civil	23 National Diploma	3	2.0	1.0
ND: Engineering: Electrical	23 National Diploma	3	2.0	1.0
ND: Engineering: Industrial	23 National Diploma	3	2.0	1.0
ND: Engineering: Mechanical	23 National Diploma	3	2.0	1.0
ND: Pulp and Paper Technology	23 National Diploma	3	2.0	1.0
ND: Surveying	23 National Diploma	3	2.0	1.0
ND: Textile Technology	23 National Diploma	3	2.0	1.0
ND: Catering Management	23 National Diploma	3	2.5	0.5
ND: Food Technology	23 National Diploma	3	2.0	1.0
ND: Clothing Management	23 National Diploma	3	2.7	0.3
ND: Analytical Chemistry	23 National Diploma	3	2.5	0.5
ND: Biotechnology	23 National Diploma	3	2.0	1.0
NHD: Maritime Studies	25 National Higher Diploma	1	0.6	0.4

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 62: Approved qualifications and majors/fields of specialisation: CUT

Approved qualification title	Qualification type	Minimum times		
		Total	Formal	Experiential
Undergraduate diploma or certificate				
NC: Dental Assisting	21 National Certificate	1	0.7	0.3
National Diploma				
ND: Agricultural Management	23 National Diploma	3	2.2	0.8
ND: Building	23 National Diploma	3	2.5	0.5
ND: Banking	23 National Diploma	3	2.5	0.5
ND: Hospitality Management	23 National Diploma	3	2.5	0.5
ND: Import and Export Management	23 National Diploma	3	2.8	0.2
ND: Business Administration	23 National Diploma	3	2.8	0.2
ND: Commercial Administration	23 National Diploma	3	2.8	0.2
ND: Engineering: Computer Systems	23 National Diploma	3	2.0	1.0
ND: Engineering: Chemical	23 National Diploma	3	2.2	0.8
ND: Engineering: Civil	23 National Diploma	3	2.0	1.0
ND: Engineering: Electrical	23 National Diploma	3	2.0	1.0
ND: Engineering: Mechanical	23 National Diploma	3	2.0	1.0
ND: Engineering: Mechatronics	23 National Diploma	3	2.0	1.0
ND: Podiatry	23 National Diploma	3	2.5	0.5
ND: Food Service Management	23 National Diploma	3	2.5	0.5

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 63: Approved qualifications and majors/fields of specialisation: CPUT

Approved qualification title	Qualification type	Minimum times		
		Total	Formal	Experiential
Undergraduate diploma or certificate				
NC: Dental Assisting	21 National Certificate	1	0.70	0.30
NHC: Emergency Care	22 National Higher Certificate	2	1.99	0.01
ND: Agricultural Management	23 National Diploma	3	2.20	0.80
ND: Agriculture	23 National Diploma	3	2.00	1.00
ND: Analytical Chemistry	23 National Diploma	3	2.50	0.50
ND: Architectural Technology	23 National Diploma	3	2.50	0.50
ND: Banking	23 National Diploma	3	3.00	0.00
ND: Building	23 National Diploma	3	2.50	0.50
ND: Cartography	23 National Diploma	3	2.00	1.00
ND: Clothing Management	23 National Diploma	3	2.70	0.30
ND: Consumer Science: Food and Nutrition	23 National Diploma	3	2.70	0.30
ND: Engineering: Chemical	23 National Diploma	3	2.00	1.00
ND: Engineering: Civil	23 National Diploma	3	2.00	1.00
ND: Engineering: Computer Systems	23 National Diploma	3	2.00	1.00
ND: Engineering: Electrical	23 National Diploma	3	2.00	1.00
ND: Engineering: Industrial	23 National Diploma	3	2.00	1.00
ND: Engineering: Mechanical	23 National Diploma	3	2.00	1.00
ND: Environmental Sciences	23 National Diploma	3	2.80	0.20
ND: Event Management	23 National Diploma	3	2.50	0.50
ND: Film and Video Technology	23 National Diploma	3	2.50	0.50
ND: Fire Technology	23 National Diploma	3	2.00	1.00
ND: Fisheries Resource Management	23 National Diploma	3	2.00	1.00
ND: Food and Beverage Management	23 National Diploma	3	2.50	0.50
ND: Food Technology	23 National Diploma	3	2.00	1.00
ND: Horticulture	23 National Diploma	3	2.00	1.00
ND: Hospitality Management	23 National Diploma	3	2.50	0.50
ND: Interior Design	23 National Diploma	3	2.90	0.10
ND: Landscape Technology	23 National Diploma	3	2.00	1.00
ND: Nature Conservation	23 National Diploma	3	2.00	1.00
ND: Oceanography	23 National Diploma	3	2.00	1.00
ND: Office Management and Technology	23 National Diploma	3	2.80	0.20
ND: Open Space and Recreation	23 National Diploma	3	2.00	1.00
ND: Operations Management	23 National Diploma	3	2.75	0.25
ND: Optical Dispensing	23 National Diploma	3	2.00	1.00
ND: Packaging and Printing	23 National Diploma	3	2.50	0.50
ND: Photography	23 National Diploma	3	3.00	0.00
ND: Plastic Technology	23 National Diploma	3	1.50	1.50
ND: Public Relations Management	23 National Diploma	3	2.50	0.50
ND: Small Business Management	23 National Diploma	3	2.50	0.50
ND: Surveying	23 National Diploma	3	2.00	1.00

Table 63 *(continued)*: Approved qualifications and majors/fields of specialisation: CPUT

Approved qualification title	Qualification type	Minimum times		
		Total	Formal	Experiential
ND: Tourism Management	23 National Diploma	3	2.5	0.5
ND: Town and Regional Planning	23 National Diploma	3	2.0	1.0
Post-diploma				
NHD: Civil Engineering	25 National Higher Diploma	1	0.5	0.5
NHD: Electrical Engineering: Heavy	25 National Higher Diploma	1	0.5	0.5
NHD: Electrical Engineering: Light	25 National Higher Diploma	1	0.5	0.5
NHD: Fire Service Technology	25 National Higher Diploma	1	0.5	0.5
NHD: Fire Service Technology	25 National Higher Diploma	1	0.5	0.5
NHD: Maritime Studies	25 National Higher Diploma	1	0.6	0.4
NHD: Mechanical Engineering	25 National Higher Diploma	1	0.5	0.5
NHD: Plastics Design Technology	25 National Higher Diploma	1	0.5	0.5

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 64: Approved qualifications and majors/fields of specialisation: NMMU

Approved qualification title	Qualification type	Minimum times		
		Total	Formal	Experiential
Undergraduate diploma or certificate				
ND: Agricultural Management	23 National Diploma	3	2.2	0.8
ND: Analytical Chemistry	23 National Diploma	3	2.5	0.5
ND: Architectural Technology	23 National Diploma	3	2.5	0.5
ND: Biomedical Technology	23 National Diploma	3	2.5	0.5
ND: Building	23 National Diploma	3	2.5	0.5
ND: Commercial Administration	23 National Diploma	3	2.8	0.2
ND: Engineering: Civil	23 National Diploma	3	2	1
ND: Engineering: Electrical	23 National Diploma	3	2	1
ND: Engineering: Industrial	23 National Diploma	3	2	1
ND: Engineering: Mechanical	23 National Diploma	3	2	1
ND: Forestry	23 National Diploma	3	2.2	0.8
ND: Forestry	23 National Diploma	3	2	1
ND: Game Ranch Management	23 National Diploma	3	2	1
ND: Inventory and Stores Management	23 National Diploma	3	2.5	0.5
ND: Journalism	23 National Diploma	3	2.5	0.5
ND: Library and Information Studies	23 National Diploma	3	2.5	0.5
ND: Nature Conservation	23 National Diploma	3	2	1
ND: Office Management and Technology	23 National Diploma	3	2.8	0.2
ND: Polymer Technology	23 National Diploma	3	2	1
ND: Public Relations Management	23 National Diploma	3	2.5	0.5
ND: Tourism Management	23 National Diploma	3	2.5	0.5
ND: Wood Technology	23 National Diploma	2	2	0
Masters degrees				
MA in Clinical Psychology	7 Masters Degree	2	1	1
MA in Counselling Psychology	7 Masters Degree	2	1	1
MA	7 Masters Degree	2	1	1
M Ed Educational	7 Masters Degree	2	1	1

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 65: Approved qualifications and majors/fields of specialisation: TUT

Approved qualification title	Qualification type	Minimum times		
		Total	Formal	Experiential
Undergraduate diploma or certificate				
NC: Dental Assisting	21 National Certificate	1	0.7	0.3
NC: Occupational Therapy Assistants	21 National Certificate	1	0.7	0.3
National Diploma				
ND: Analytical Chemistry	23 National Diploma	3	2.5	0.5
ND: Analytical Chemistry (Extended)	23 National Diploma	3	2.5	0.5
ND: Agriculture: Animal Production	23 National Diploma	3	2.0	1.0
ND: Agriculture: Crop Production	23 National Diploma	3	2.0	1.0
ND: Adventure Tourism Management	23 National Diploma	3	2.5	0.5
ND: Business Communication	23 National Diploma	3	2.5	0.5
ND: Biotechnology	23 National Diploma	3	2.0	1.0
ND: Biotechnology (Extended)	23 National Diploma	3	2.0	1.0
ND: Building	23 National Diploma	3	2.5	0.5
ND: Engineering: Chemical	23 National Diploma	3	2.0	1.0
ND: Engineering: Civil	23 National Diploma	3	2.0	1.0
ND: Engineering: Civil (Extended)	23 National Diploma	3	2.0	1.0
ND: Engineering: Computer Systems	23 National Diploma	3	2.0	1.0
ND: Electrical/Mechanical Engineering	23 National Diploma	3	1.5	1.5
ND: Agriculture: Development and Extended	23 National Diploma	3	2.0	1.0
ND: Engineering: Electrical	23 National Diploma	3	2.0	1.0
ND: Engineering: Electrical: Extended	23 National Diploma	3	2.0	1.0
ND: Engineering: Industrial	23 National Diploma	3	2.0	1.0
ND: Ecotourism Management	23 National Diploma	3	2.5	0.5
ND: Equine Science	23 National Diploma	3	2.0	1.0
ND: Entrepreneurship	23 National Diploma	3	2.5	0.5
ND: Food Technology	23 National Diploma	3	2.0	1.0
ND: Food Technology (Access Programme)	23 National Diploma	3	2.0	1.0
ND: Food Technology (Extended)	23 National Diploma	3	2.0	1.0
ND: Game Ranch Management	23 National Diploma	3	2.0	1.0
ND: Horticulture	23 National Diploma	3	2.0	1.0
ND: International Communication	23 National Diploma	3	2.5	0.5
ND: Cartography	23 National Diploma	3	2.0	1.0
ND: Small Business Management	23 National Diploma	3	2.5	0.5
ND: Landscape Technology	23 National Diploma	3	2.0	1.0
ND: Agriculture: Commercial Mixed Farm	23 National Diploma	3	2.0	1.0
ND: Engineering: Metallurgy	23 National Diploma	3	2.0	1.0
ND: Nature Conservation	23 National Diploma	3	2.0	1.0
ND: Medical Orthotics and Prosthetics	23 National Diploma	3	2.0	1.0
ND: Public Relations Management	23 National Diploma	3	2.5	0.5
ND: Recreation Management	23 National Diploma	3	2.5	0.5
ND: Surveying	23 National Diploma	3	2.0	1.0
ND: Tourism Management	23 National Diploma	3	2.5	0.5
ND: Veterinary Technology	23 National Diploma	3	2.5	0.5

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 66: Approved qualifications and majors/fields of specialisation: UJ

Approved qualification title	Qualification type	Minimum times		
		Total	Formal	Experiential
National Diploma				
ND: Analytical Chemistry	23 National Diploma	3	2.5	0.5
ND: Architectural Technology	23 National Diploma	3	2.5	0.5
ND: Biotechnology	23 National Diploma	3	2.0	1.0
ND: Building	23 National Diploma	3	2.5	0.5
ND: Clothing Management	23 National Diploma	3	2.7	0.3
ND: Industrial Engineering	23 National Diploma	3	2.0	1.0
ND: Engineering: Chemical	23 National Diploma	3	2.0	1.0
ND: Engineering: Metallurgy	23 National Diploma	3	2.0	1.0
ND: Engineering: Civil	23 National Diploma	3	2.0	1.0
ND: Engineering: Computer Systems	23 National Diploma	3	2.0	1.0
ND: Engineering: Electrical	23 National Diploma	3	2.0	1.0
ND: Mechanical Engineering	23 National Diploma	3	2.0	1.0
ND: Extraction Metallurgy	23 National Diploma	3	2.0	1.0
ND: Food Technology	23 National Diploma	3	2.0	1.0
ND: Hospitality Management	23 National Diploma	3	2.5	0.5
ND: Mineral Surveying	23 National Diploma	3	1.5	1.5
ND: Mining Engineering	23 National Diploma	3	2.0	1.0
ND: Public Relations and Communications	23 National Diploma	3	2.5	0.5
ND: Public Relations Management	23 National Diploma	3	2.5	0.5
ND: Small Business Management	23 National Diploma	3	2.5	0.5
ND: Small Business Management (Extended)	23 National Diploma	3	2.5	0.5
ND: Town and Regional Planning	23 National Diploma	3	2.0	1.0

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

iii. Funding of WIL

WIL entails costs to students, universities and even employers and others who provide WIL opportunities. Students incur costs related to accommodation, travel and equipment, among others. On the other hand, universities incur staff-related costs and operational expenses, as well as costs related to placement of students, monitoring and assessment of students, and development of study material, among others. Yet, from the questionnaire data obtained from universities, universities generally perceive the WIL component of their programmes as being either unfunded or under-funded. An analysis of the data shows that national certificates and national diplomas offered at all of the universities of technology and comprehensive universities constitute the majority of qualifications whose WIL components were perceived to be unfunded (the WIL component of all the programmes listed in Tables 59–66, above, are said to be unfunded).

The lack of state funding for the WIL components of the majority of diploma programmes offered by universities of technology and comprehensive universities is partly linked to the requirements for funding WIL that were applied when these programmes were previously offered by technikons. Following the merger process, these programmes are now offered by universities of technology and comprehensive universities, and the funding arrangement has remained unchanged. While being offered by technikons, the experiential component of these programmes was not funded, since the students went to work in a company, where they were being paid and had no contact with the institution until they had completed their training. In other words, other than the students receiving some form of remuneration, the experiential component did not seem to be an integral curricular requirement of the academic programme, and there was limited supervision and assessment of the students by the technikons.

Traditional universities listed mainly medicine (MBChB), dentistry (BChD), teacher education and the Bachelor of Social Work as the programmes that have a mandatory WIL component that is not subsidised by the DHET. As for under-funded programmes with a mandatory WIL component, about nine universities indicated that they did not offer qualifications in this category, while some universities indicated the same qualifications as those perceived to be unfunded.

Several universities offering health sciences indicated that the clinical training component is under-funded. The funding of the clinical component of programmes in the health sciences is however currently beyond the purview of the DHET. The funding for this component is expected to come from the Health Professions Training and Development Grant (HPTDG) of the Department of Health. For a range of reasons, however, this grant has often not been made available to affected universities. Treasury has since allocated funding for a clinical training grant, through the DHET, for this purpose. In this regard, the subsidy allocated to universities is based on actual student enrolments in approved programmes that have a clinical training component.

In the research questionnaire, institutions were asked to provide examples of the extent of the under-funding of the WIL components. Hardly any of the examples that were provided included 'hard evidence' of the extent of the under-funding. Almost all of the universities indicated that they fund the shortfall from the institutional annual operating budget by means of cross-subsidisation. Some of the institutions make use of third-stream income to fund the WIL shortfall. The feedback provided by the universities was insufficient to allow the Committee to calculate the extent of the under-funding of the qualifications that have a credit-bearing component of any kind of WIL.

Universities deal with the apparent under-funding of WIL in different ways – some of which increase the fee burden on students, such as the charging of an additional fee for WIL. In some cases, students are involved in identifying placement sites, which obviously entails extra costs. Such functions should ordinarily be undertaken by the universities. As mentioned, several other universities fund WIL through cross-subsidisation. In the case of programmes in the health sciences, the experiential training components are partly funded through the earmarked clinical training grant.

The picture that emerges from the questionnaire data is the dominant perception that WIL is either unfunded or under-funded. However, in the absence of information on the accreditation of these programmes as having WIL learning components, it is difficult to determine accurately which programmes are unfunded or under-funded. Equally, in the absence of this information, it is difficult to accurately estimate the extent of the under-funding of WIL for those programmes whose WIL component currently receives government subsidy. Consequently, the starting point for determining which programmes are funded or otherwise, and the extent of possible under-funding, should be the accreditation of these programmes by the HEQC.

The Education Deans Forum indicated that the teaching practice of the B Ed programme is a particular case of a WIL component that is definitely under-funded. Having received an extensive submission regarding the shortage of funding of the WIL component of the B Ed programme, the Committee decided to perform an analysis and to make an estimate of the level of under-funding.

a) <u>Costing of the teaching practice component of the B Ed</u>

The cost drivers for WIL are as follows:

a) The placement of students.

b) Transport, travel and subsistence allowances for students and staff.

c) Operational expenditure.

d) Telephone and fax costs.

e) Monitoring and assessment of students.

f) Running costs of a centralised co-operative educational unit.

g) Development of curriculum and study material, including printing costs.

h) Organising and arranging the placement of students.

To quantify the extent of the under-funding of the WIL component, an 'income and expenditure' calculation for the WIL component must be done. What complicates a calculation to estimate the 'income' side is the fact that the institutions themselves can determine the credit value (or weight) of the WIL component of the approved qualification (which determines the subsidy) and the tuition fee of such modules. The expenses associated with offering of the WIL components are equally difficult to quantify and may vary according to qualification.

As mentioned, the Committee decided to investigate the perceived under-funding of the WIL component of teaching practice in the B Ed programmes. One of the larger universities with high enrolments in the B Ed programme was approached to provide inputs for analysing the under-funding of the teaching practice component of the teacher training programmes. The following response was received from the university, which indicates the codes of the

teaching practice modules as for the different B Ed programmes as well as the costs associated with conducting the modules:

a) At the university the teaching practice entails six months of teaching practice in the fourth year of studies.

b) It is important to note that all universities are at the time of publication of this report once again revising their teacher education programmes, in order to align with MRTEQ (Minimum Requirements for Teacher Education Qualifications), which was gazetted in July 2011.

c) The costs for conducting teaching practice consist of the following:

   i. There are operational costs for supervision and assessment of teaching practice at the schools. Academic staff members incur costs to travel to schools, in order to assess students at the schools. At this university students are placed in schools in the city close to the university to minimise these costs, but universities in other geographical locations also place students further away.

   ii. There are substantial staff costs for supervision and assessment of teaching, given increasing student numbers in recent years. There are a finite number of hours within which students can be assessed, and more staff are desperately needed to deal with these numbers. In some instances, the university is making use of the expertise of experienced teachers (i.e. non-staff members), but this still needs to be funded.

   iii. Education students incur additional costs during periods of teaching practice. During teaching practice, the most vulnerable students are away from the 'safety net' of campus life, they often have additional travel expenditure and they have indicated that the food costs are also higher when they are away from campus.

   iv. It is possible to estimate the subsidy income for the university associated with the teaching practice component of the B Ed programmes due to the fact that the teaching practice modules are credit-bearing modules. The subsidy generated by these modules was estimated with the help of the university's HEMIS office. It is important to note that the teaching practice modules in this case constitute, on average, approximately 7% of the total number of FTEs of the B Ed programmes.

The costs can be classified into a) 'operational costs', which should be funded by the university, and b) the costs incurred by the student, which should be carried by the students themselves. It was calculated that the additional cost per student for the university for the

teaching practice was R194 per student, which amounts to approximately R416,600, which is considerably less than the subsidy income of the teaching practice modules for the university, which was R2 048 590.

By contrast, the additional cost – of R2 000 – for the student will amount to a total expense of R4,166 million, which is about twice the subsidy income. The tuition fee income for the teaching practice modules, which in the case of the university analysed amounted to approximately R1.45 million in 2011, should also form part of the equation to determine the total income of the university.

It is very important to remember that the income of a university generated through the block grant of the funding framework is a Council-controlled income. The same applies in the case of the income generated by the tuition fees, which is determined by the university.

The allocation of operating expenses (including staff remuneration) to operational units of a university – for example, the faculties – is determined by the management of a university. Resource allocation is a Council and senior management responsibility. Cross-subsidisation within an institution, between faculties, departments, and functions within a department, is a generally accepted mechanism in distribution of the available funds. It can therefore be argued that a Faculty of Education, for instance, should ensure, by engaging with the committee responsible for the institutional resource allocation, that it receives the resources necessary for services rendered to deliver the quality outputs required.

It is also questionable whether a university should be responsible for subsidising the expenses incurred by students for travelling, accommodation and subsistence when enrolled for a module that requires that a period of time be spent away from campus. Such expenses are best covered by the students themselves or through student bursaries or loans. If a university (or faculty) wishes to make a contribution to such expenses, that contribution should form part of the budgeting process of the faculty and could be requested from the institutional resource allocation committee.

In spite of the arguments above, an attempt will be made to estimate the cost of providing additional funds for the teaching practice (WIL) component of the B Ed programmes offered in the system. The calculation is based on a number of assumptions:

a) The percentage of the teaching practice component of the B Ed programmes is the same as observed at the particular university, namely 7%.
b) The tuition fee charged for the teaching practice module is R700 (charged by the university that participated in the analysis).
c) The university operational cost is R200 per student.
d) The additional cost to students is R2 000 per student for the teaching practice module.

Table 67 (below) gives an indication of the number of student enrolments for the B Ed programmes at each institution and the associated FTEs. The data was obtained from the DHET in its report *Trends in Teacher Education 2010, March 2012* (2012f).

Table 67 indicates that the shortfall in offering the teaching practice modules is relatively modest if the total income (subsidy and tuition fees) and the additional expenditure for faculty and students are taken into account. The estimate of the cost for students and faculty, as indicated above, may have resulted in the relatively small shortfall. A more accurate costing exercise should be done to determine the 'actual' cost per student for the faculty and the student.

Making provision for the additional costs for offering the teaching practice modules for the B Ed programmes in the block grant will not ensure that the Faculties of Education actually are allocated the funds. Similarly, the management of an institution determines the tuition fee of the programmes and modules. The responses to the questionnaire showed that some institutions make provision for the additional expenses by adjusting the tuition fees for the teaching practice modules. As indicated above, the resource allocation from the block grants and tuition fees is done centrally within an institution.

Table 67: Estimating the cost implications of the WIL component of the B Ed programmes

University	B Ed (headcounts)	B Ed (FTEs)	7% WIL	Subsidy income	Tuition fees	Faculty cost	Student cost	Shortfall
				R10 000 per FTE	R700	R200	R2 000	
CPUT	2 838	2 770	193.9	R1 939 000	R1 357 300	R387 800	R3 878 000	-R969 500
UCT	0	0	0.0	R0	R0	R0	R0	R0
CUT	1 640	1 505	105.4	R1 053 500	R737 450	R210 700	R2 107 000	-R526 750
DUT	826	544	38.1	R380 800	R266 560	R76 160	R761 600	-R190 400
UFH	946	827	57.9	R578 900	R405 230	R115 780	R1 157 800	-R289 450
UFS	1 805	850	59.5	R595 000	R416 500	R119 000	R1 190 000	-R297 500
UJ	1 190	1 115	78.1	R780 500	R546 350	R156 100	R1 561 000	-R390 250
UKZN	2 235	2 240	156.8	R1 568 000	R1 097 600	R313 600	R3 136 000	-R784 000
UL	645	731	51.2	R511 700	R358 190	R102 340	R1 023 400	-R255 850
NMMU	1 302	1 199	83.9	R839 300	R587 510	R167 860	R1 678 600	-R419 650
NWU	3 758	3 691	258.4	R2 583 700	R1 808 590	R516 740	R5 167 400	-R1 291 850
UP	2 749	2 430	170.1	R1 701 000	R1 190 700	R340 200	R3 402 000	-R850 500
RU	16	7	0.5	R4 900	R3 430	R980	R9 800	-R2 450
UNISA	18 582	6 976	488.3	R4 883 200	R3 418 240	R976 640	R9 766 400	-R2 441 600
SU	791	826	57.8	R578 200	R404 740	R115 640	R1 156 400	-R289 100
TUT	2 402	2 356	164.9	R1 649 200	R1 154 440	R329 840	R3 298 400	-R824 600
Univen	1 162	633	44.3	R443 100	R310 170	R88 620	R886 200	-R221 550
VUT	0	0	0.0	R0	R0	R0	R0	R0
WSU	2 919	2 987	209.1	R2 090 900	R1 463 630	R418 180	R4 181 800	-R1 045 450
UWC	907	549	38.4	R384 300	R269 010	R76 860	R768 600	-R192 150
Wits	1 741	1 631	114.2	R1 141 700	R799 190	R228 340	R2 283 400	-R570 850
UZ	3 609	3 535	247.5	R2 474 500	R1 732 150	R494 900	R4 949 000	-R1 237 250
MUT	0	0	0.0	R0	R0	R0	R0	R0
Total	**52 063**	**37 402**	**2 618.1**	**R26 181 400**	**R18 326 980**	**R5 236 280**	**R52 364 800**	**-R13 092 700**

Source: DHET (2012f)

iv. Recommendations

It is *undeniable* that WIL is an integral part of both vocational and professional training. It not only opens up a broad range of opportunities for students to engage with the disciplines and professions but, more importantly, is a key ingredient for the successful integration of graduates into the world of work (Patrick et al. 2008; CHE 2011a). The questionnaire data obtained from universities indicates that, in particular, universities of technology and comprehensive universities offer a wide range of programmes with a mandatory WIL component. These universities generally perceive the WIL component of their programmes to be either unfunded or under-funded. Whether or not WIL is unfunded or under-funded, the important point is that WIL entails costs to universities, students and even employers, and should therefore be subsidised given its indispensable value in both vocational and professional training.

The Committee makes the following recommendations:

a) WIL components of programmes at public universities should be funded provided that they meet the following key requirements:
   (i) WIL must be an integral and mandatory curricular requirement of the academic programme concerned. That is, it must be undertaken within a purposefully designed curriculum and should be credit bearing. The number of credits should relate to the learning outcomes of WIL, and not to the number of hours spent on WIL.
   (ii) Qualifications with a WIL component must be accredited as such by the HEQC within the new HEQSF. As captured in the CHE's good practice guide (CHE 2011a), the WIL component should be appropriately structured, properly supervised and assessed. The inputs received by the Committee suggested that these three elements are lacking in many WIL programmes. It is therefore anticipated that, in most cases, re-curriculation will be required in order to conform to HEQSF requirements.

Preliminary costing of the funding of the existing WIL shows that this would require an additional R137 million per year. Logically, it would make sense for this additional funding to be sourced from the National Skills Fund (NSF).

b) Students also incur costs to participate in WIL programmes. Even though the extent to which student-related costs have hindered successful participation in WIL programmes has not been established, preliminary assessments have indicated that poor students

in particular are negatively affected by the costs related to WIL. The DHET should therefore consider funding student-related costs of WIL through the NSF. Such funding should only apply to students who participate in WIL programmes that meet the criteria in recommendation (a) above and who do not receive any form of remuneration from the WIL sites.

c) The student expenses with regard to the teaching practice that forms part of the B Ed programme should be funded as part of student bursaries or through funding from the NSF.

v. Community engagement

Recent developments in the discourse on community engagement in the South African higher education system began with White Paper 3, on higher education, of 1997 (DoE 1997). It should be mentioned at the outset that the debates on community engagement in South African higher education – its conceptualisation, practice, and funding – remain unresolved. Equally, as in the case of WIL, a definitive policy on community engagement has yet to be promulgated, which consequently constrains the formulation of appropriate funding approaches.

There are very few direct references in government policy documents produced between 1997 and 2010 to community engagement as a core function of higher education. The purposes of higher education presented in White Paper 3 (DoE 1997) do not include community engagement as a distinct function of higher education. The goals articulated in the White Paper for the higher education system, on the one hand, and at institutional level, on the other, refer to developing social responsibility through community service programmes, and through making available infrastructure and expertise for community service programmes (DoE 1997).

The three purposes of higher education enunciated in the White Paper are: meeting the learning needs of individuals; addressing the development needs of society and the labour market in a knowledge economy; and contributing to the socialisation of critical citizens. The summary of higher education's responsibility in reconstruction and development are unambiguously human resource development, high-level skills training, and the production, acquisition and application of new knowledge (DoE 1997).

That said, the very call of the White Paper to change the relationship between higher education and society, and the fact that higher education as such is asked not only to help in undoing the ills of apartheid education but also to develop a new type of education to replace it, created the political and conceptual spaces to think of community engagement as a particularly important role of higher education and eventually as a core function of higher education.

The *National Plan for Higher Education,* or NPHE (MoE 2001: 79), sets as a priority under the restructuring of the higher education system, "to enhance responsiveness to regional and national needs for academic programmes, research and community service", and for the first time included community engagement together with teaching and learning, and research, as a function of higher education.

Against this backdrop JET Education Services (JET) conducted a survey of community service activities within higher education institutions in order to "develop an understanding of community engagement and its potential role in higher education" (CHE 2006: 8). Based on the findings of the survey, JET set up the Community–Higher Education–Service Partnerships (CHESP) in 1999, with the specific purpose of piloting community engagement initiatives in higher education. The main focus of JET[13] between 1999 and 2008 was on the practice and conceptualisation of service learning. The interest demonstrated by the Ministry and the Department of Education paved the way for a greater foregrounding of community engagement as a "third mission" of higher education (CHE 2006).

The inclusion of community engagement in the HEQC's founding framework and in its framework and criteria for the institutional quality audits conducted between 2004 and 2011 brought to the fore the interest in and importance of community engagement in higher education as the third core function. The 13 institutional quality audits of public higher education institutions conducted by the HEQC between 2004 and 2009 confirmed the variety of activities included under community engagement, and how this was tied to institutional diversity and mission orientation; the diversity in the position of community engagement as a 'core function'; the lack of adequate resourcing; and the inadequacy of the internal systems of monitoring and quality assurance for this function. These findings have, to some extent, been modified by the development and implementation of improvement plans but there are

[13] The organisation was founded in 1992 as the Joint Education Trust (JET) and subsequently (around 2001/02) changed its name to JET Education Services (JET).

still wide differences between the ways in which institutions approach community engagement.

The submissions to the Committee by universities emphasise partnerships between universities and communities, where universities utilise their knowledge capital and other resources to address the developmental needs of communities, as a core element of community engagement. Thus, from these submissions, community engagement seeks primarily to develop a closer relationship between universities and society or immediate environments. As noted by Van Schalkwyk (2011), many universities have set up structures such as committees or working groups to promote and monitor community engagement. Other than community engagement being one of the criteria in institutional audits (as already mentioned), it is also increasingly becoming a key performance indicator in the formal evaluation procedures for academic staff in several universities (Van Schalkwyk 2011).

In addition to contributing to community development and also offering students and universities important learning opportunities, community engagement initiatives seem to be designed to embed students in the realities of their society and instil in them the values of responsible citizenship, as encapsulated in the NPHE of 2001. Community engagement is therefore a critical function that universities should be encouraged to undertake.

However, it is instructive that not a single submission received from the universities mentioned community engagement as a mandatory component of their accredited programmes. The tendency was to locate community engagement in what higher education scholars would describe as the 'extended periphery' as opposed to the 'academic core' (Clark 1998). The extended periphery refers to "all those activities that are situated outside the academic core of universities, and that are usually associated with their third mission" (Van Schalkwyk 2011: 51).

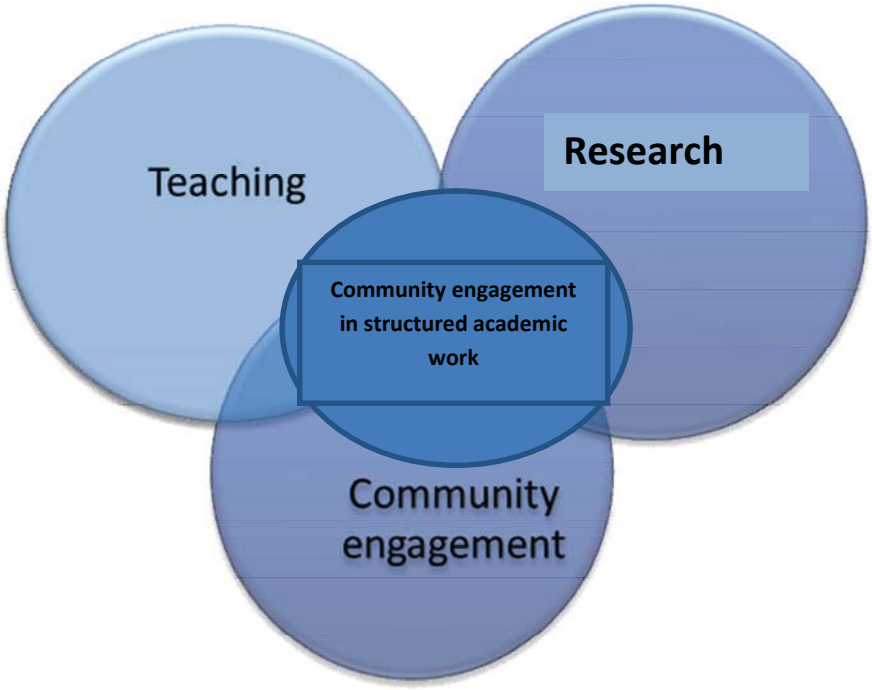
vi. Recommendations

The wide differences in the ways in which universities approach community engagement, coupled with its location outside of the academic core (i.e. outside of teaching and learning, and research), makes the funding of community engagement an extremely complex task. Even though some suggestions have been made to the effect that an earmarked grant or a new subsidy category within the block grant should be introduced to support community engagement activities at universities, given the wide differences in the ways in which universities approach community engagement and the funding constraints, among other

factors, the **Committee recommends that only those kinds of community engagement programmes or activities that carry credit value as part of an accredited academic programme receive funding**.

The recommendation above means that only those community engagement activities that are an integral and structured part of the research and teaching functions of universities should be funded. This link between teaching, research and community engagement is captured by the intersection in Diagram 11.

Diagram 11: Intersection between community engagement, teaching and research



7.5 Clinical training of health professionals

i. Introduction

Clinical training grants for health professionals were introduced by the DHET as earmarked grants because, as already mentioned, the clinical grant portion of the Health Professions Training and Development Grant (HPTDG) of the Department of Health were not reaching the universities. The use of the clinical training grants is limited to the following:

a) Appointing additional clinical training staff.
b) Appointing other staff to support the delivery of clinical training services.
c) Supporting partnership agreements with public and/or private providers of clinical training services.
d) Meeting part of the operating costs of clinical training service delivery.
e) Improving the infrastructure needed for clinical training, including equipment, building refurbishment, and the construction of new clinical training facilities.

The following health sciences programmes have been approved for clinical grant funding in 2012/13 and 2013/14:

a) Professional undergraduate degrees in medicine (MBChB).
b) Professional undergraduate degrees in dentistry (BDS).
c) Professional undergraduate degrees in physiotherapy, occupational therapy, dental therapy, speech and hearing, pharmacy, and dietetics.
d) Professional masters degrees in dentistry, medicine, and family medicine.
e) Undergraduate initial nursing training in bachelor degrees and national diplomas.
f) Undergraduate programmes in biomedical technology in bachelor degrees and national diplomas.
g) Undergraduate programmes in clinical technology in bachelor degrees and national diplomas.
h) Undergraduate programmes in emergency medical care in bachelor degrees and national diplomas.
i) Undergraduate programmes in radiography in bachelor degrees and national diplomas.

These grants that support the clinical training of health professionals are awarded to universities on the basis of headcount enrolments in these programmes. Once guideline allocations are made available to universities, they must submit a detailed clinical training budget, which sets out the reasons for the budget decisions made by the university.

Based on these budgets and motivations, final allocations are then made for implementation. Continued funding is dependent on a satisfactory progress report on the institutions' use of these funds, including an audited financial report. Table 68 (below) shows the actual allocations for the period 2008/09–2011/12 per university.

ii. Recommendations

The Committee makes the following recommendations:

a) The clinical training grant is welcomed and has to remain as an earmarked grant since it was earmarked by Treasury for these specific purposes.

b) The current national need to increase health professions will lead to rapid increases in student numbers, and it would become imperative that the grant be increased in relation to the expected increases in student numbers.

Table 68: Clinical training grant allocations for the period 2008/09–2011/12

University	2008/09 (R'000)	2009/10 (R'000)	2010/11 (R'000)	2011/12 (R'000)
CPUT	-	-	3 470	3 678
UCT	23 610	35 410	32 148	34 077
CUT	-	-	1 686	1 787
DUT	-	-	3 088	3 275
UFH	-	-	3 489	3 698
UFS	15 700	23 550	22 812	24 195
UJ	-	-	4 813	5 102
UKZN	30 130	45 190	51 503	54 623
UL	24 510	36 760	34 162	36 211
MUT	-	-	294	312
NMMU	260	390	4 818	5 110
NWU	740	1 100	5 785	6 132
UP	29 538	44 312	35 424	37 571
RU	260	400	725	768
SU	22 668	34 011	29 519	31 290
TUT	-	-	3 938	4 177
VUT	-	-	837	887
Univen	-	-	2 946	3 123
WSU	8 200	12 290	13 341	14 141
UWC	9 980	14 980	24 063	25 506
Wits	34 400	51 610	46 767	49 532
UZ	-	-	3 141	3 331
Total	**199 996**	**300 003**	**328 769**	**348 526**

Source: DHET (2012g)

Notes: UNISA, being a distance education provider, is not included here. No grant was made to some of the universities in 2008/09–10 since more categories of clinical training qualified for the grant in later years, in which these universities also began to receive grants

7.6 Veterinary sciences

i. Background

Veterinarians and veterinary services are indispensable to the health and wellbeing of animals and humans and play an important role in the economy of a country (DHET 2010b). The apparent lack of professionals in the veterinary field in South Africa is a serious national scarce-skills matter that could threaten the country's ability to promote animal health, welfare and production, food security, public health and economic growth.

The University of Pretoria is the only institution in South Africa that trains veterinarians. It is also the only institution that trains veterinary nurses, one of the veterinary para-professions recognised by the South African Veterinary Council. The cost of veterinary training is very high. This leads to an ongoing operating deficit (UP 2011). This is due to the nature of the training that, among other things, requires a low student-to-staff ratio. The high costs include the provision of clinical facilities, the running of the veterinary academic hospital, the provision of clinical training through community clinics, ambulatory clinics, visits to animal-production facilities and visits to food-processing plants, the need for clinical diagnostic laboratories, and the need for a Teaching Animal Unit.

Unlike the case of human medical and dental faculties, where hospital facilities are provided and maintained by provincial health departments, the University of Pretoria has to provide facilities and maintain the veterinary academic hospital, outpatient and ambulatory clinic and research and diagnostic support laboratories for the Faculty of Veterinary Science. This places a heavy burden on the university's budget, and leads to an unacceptable level of cross-subsidisation within the university (UP 2011).

ii. Funding of veterinary sciences

For the period 2004/05–2009/10 the University of Pretoria (UP) was the only university that received funding for veterinary sciences. The DHET recognised the high cost of veterinary training. The former DoE made provision for a separate component in the block grant of the funding framework to provide for the experiential training of veterinary science students in the professional Bachelor of Veterinary Science programme at UP. Continual discussions

and negotiations between the former DoE, and DHET and UP, as well as extensive reports on the financial requirements of the Faculty of Veterinary Sciences and the level of under-funding of veterinary sciences, led to increased allocations to the university over the period 2005/06–2009/10. This amounted to R19 million in 2005/06 and R67 million in 2009/10.

Despite the increases detailed above, Table 69 indicates continued shortfalls. Apart from these operating shortfalls, UP indicated that it needed about R80 million for new infrastructure and upgrading of existing infrastructure, which would also assist in increasing the intake of undergraduate students.

Table 69: Shortfalls experienced by the Faculty of Veterinary Sciences at UP (2007–11)

	2007	2008	2009	2010	2011*
Deficit	R32 110 111	R33 798 043	R31 496 831	R17 619 205	R40 426 739

Source: UP (2011)

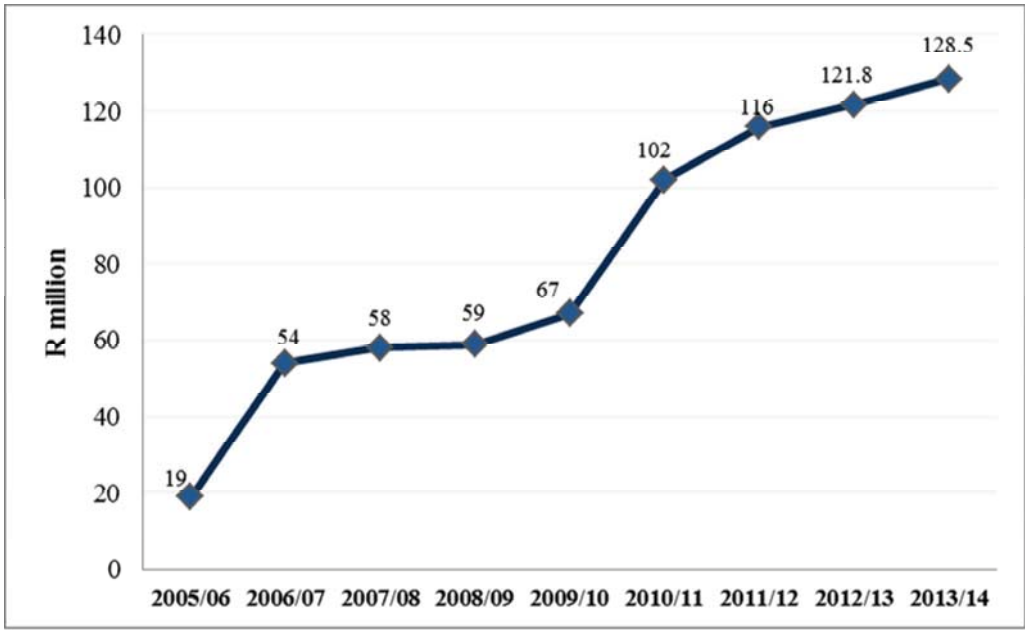
Note: * Provisional

In 2006 the then DoE undertook to enter into discussions with the national Department of Agriculture to explore the possibility of cost sharing, particularly with regard to the running of the veterinary hospital. These discussions were apparently never concluded.

Whereas the veterinary sciences funding was part of the block grant in the funding framework introduced in 2004 for UP, it became an earmarked grant for veterinary sciences in the 2010/11 financial year, where more institutions were invited to apply for this earmarked funding. The *Ministerial Statement on Higher Education Funding: 2009/10 to 2011/12* (MoE 2009a) indicated that the total amount available for all veterinary sciences would be R102 million and no special amount was allocated to UP. In addition to that university, the following three universities were invited to submit proposals for funding through this earmarked grant, since they were involved in veterinary health technicians training: North West University, Tshwane University of Technology and UNISA. Figure 18 (below) shows that the allocations for veterinary sciences increased from R19 million in 2005/06 to R67 million in 2009/10. A steep increase was then experienced to R102 million when it became an earmarked grant, with an expected allocation of R128.5 million in

2013/14. The allocations to the four participating universities for 2010/11–2011/12 are shown in Table 70 (below).

Figure 18: Allocations made to veterinary sciences (2005/06–2013/14)



Source: UP (2011); DHET (2010b)

The following broad criteria, which were provided by the DHET for the assessment of the applications, reflect the motivation for the introduction of the earmarked grant:

a) The programmes supported should have substantial clinical training requirements.

b) Applications should set as targets: (a) improvements to the equity profiles of veterinary sciences programmes, and (b) increases in the graduate outputs of these programmes.

c) These funds should be used in the geographical distribution of veterinary sciences specialisations.

Table 70: Veterinary sciences allocations to universities (funding period 2010/11–2011/12)

University	2010/11	2010/11	2011/12	2011/12
	R'000	% of total allocation	R'000	% of total allocation
UP	91 000	89.20	106 500	91.80
NWU	7 000	6.90	5 000	4.30
UNISA	3 000	2.90	4 000	3.40
TUT	1 000	1.00	500	0.40
Total budgeted for by the Department	**102 000**	**100.00**	**116 000**	**100.00**

Source: DHET (2012g)

iii. Training in veterinary sciences offered at South African universities

As already stated, the Faculty of Veterinary Science at UP currently trains all veterinarians and veterinary nurses in South Africa. Animal health technicians are trained at the Mafikeng Campus of North West University and through UNISA. Veterinary technologists are trained at Tshwane University of Technology. Animal welfare assistants do not have any formal qualification but primarily receive in-service training. A training programme for animal welfare assistants is currently being considered by UNISA. No training programme for laboratory animal technologists is currently being offered in South Africa.

iv. Inter-institutional working group to enhance the collaboration between training institutions to expand existing veterinary science programmes

Given the national shortage in veterinary science graduates, an inter-institutional working group was established by the Minister in August 2010 to assist the DHET in developing the capacity of universities to expand existing veterinary science programmes, and to improve the geographical spread of prospective students and improve equity profiles of students. The working group consisted of representatives from UP, North West University, Tshwane University of Technology and UNISA.

Some of the main recommendations made by that working group are as follows (DHET 2011b):

a) There is consensus that establishing a second fully fledged veterinary faculty would be prohibitively expensive, and it is recommended that this should only be done if it proved to be impossible to ensure an increase in the number of veterinarians in the longer term within the existing delivery sites.

b) Although there is existing collaboration among the universities involved, this needs to be expanded in the following areas:

- Curricular articulation and curriculum development, particularly with a view to improved collaboration and co-operation.
- Sharing of facilities.
- Upgrading of staff qualifications.
- Developing a new cohort of academics.
- Staff exchanges and inter-institutional development.
- Student recruitment and awareness campaigns.
- Sharing of information and experience in the development of infrastructure, curricula and so on.
- The development of primary animal health care.

c) Bursaries need to be introduced for the development of black (African, coloured and Indian) veterinarians and postgraduate students, since NSFAS loan funding is not sufficient to draw students to the programmes and does not cover the immense cost of veterinary and para-veterinary training.

d) More attention should be paid to waste management and bio-security.

e) There should be investigation of an appropriate model for funding and managing a farm, to provide training and research facilities in animal production.

f) Universities need to fine-tune their student enrolment management processes in an attempt to address the imbalances regarding race, gender and geographical distribution profiles.

g) A clear distinction should be drawn between operational expenditure funded from the earmarked veterinary sciences grant and projects funded from the general infrastructure grant.

v. Inputs received from role-players

UP indicated that it is cumbersome to separate out the cost of the veterinary sciences, due to the nature of these programmes. The need for the veterinary sciences grant to be an earmarked grant, with all the associated financial reporting requirements, was questioned.

vi. Recommendations

The Committee makes the following recommendations:

a) The veterinary sciences earmarked grant should be incorporated into the block grant as a line item, and the reporting requirements should be simplified by only requiring reporting on enrolments, graduates, equity profiles and geographical spread of students.

b) Discussions with the national Department of Agriculture, Forestry and Fisheries should be initiated once again, to explore further the possibilities of co-funding of the animal hospital, in a bid to assist UP with the operating deficit of the animal hospital. If such discussions do not succeed, the DHET should increase the allocations to veterinary sciences incrementally over time and provide more funds to UP in particular.

c) The Committee supports the continuation and recommendations of the inter-institutional working group. Given UP's years of overall expertise and the fact that the university provides a critical national resource for veterinary health sciences, its leadership and assistance in developing the capacity of the other three universities involved is welcomed.

d) The Committee supports the proportional allocations to the four universities, in relation to their enrolment share, as well as special support in the allocation for the animal hospital at UP.

7.7. Development of African languages

i. Introduction

In October 2010, the Minister hosted a round-table discussion on the development of African languages in higher education. The purpose of the round-table was to provide an opportunity for stakeholders to discuss the status of African languages and make proposals for the strengthening of the development of these languages within public higher education institutions. The round-table sought to identify the challenges confronting higher education institutions with regard to the development of African languages as medium of instruction, and to explore mechanisms and strategies that could be put in place to address these challenges. Recommendations emanated from these round-table discussions for the Minister's consideration, and the Minister established an Advisory Panel on African Languages in Higher Education to develop an implementation plan for the round-table recommendations. The terms of reference of the panel were formalised and published through a government gazette (No. 35028 on 10 February 2012). The terms of reference provide, among other things, for the panel to undertake a comprehensive study of the status of African languages at universities and the initiatives undertaken by universities regarding the development of these languages on campuses.

The timelines of the work of the Ministerial Committee for the Review of the Funding of Universities and the work of the Advisory Panel on African Languages in Higher Education are not aligned, which creates a challenge in terms of synchronising the work undertaken by the Committee and the Panel. The Committee will however make recommendations with regard to the development of African languages.

To illustrate the low levels of participation in indigenous African languages, Table 71 (below) shows the number of all language graduates between 2006 and 2011. While there was a decrease in the total number of graduates from 2006–10 (down from 1 933 in 2006 to 1 502 in 2010), the number of graduates increased from 1 502 in 2010 to 1 725 in 2011. The number of graduates in indigenous African languages was very low, with only 354 graduates in 2011, compared to 1 371 graduates in studies in Afrikaans and English.

ii. Policy imperatives

Section 6 (2) of the Constitution of the Republic of South Africa (1996) states that in, "recognising the historically diminished use and status of the indigenous languages of our people, the state must take practical and positive measures to elevate the status and advance the use of these languages". Furthermore, Section 29 (2) of the Bill of Rights states that "Everyone has the right to receive education in the official language or languages of their choice in public educational institutions where that education is reasonably practicable".

Table 71: Language graduates between 2006 and 2011 (excluding B Ed)

Language graduates	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Study and uses of the Afrikaans language	288	168	162	173	257	253
Study and uses of the English language	1 187	1 149	1 103	1 069	957	1 118
Subtotal	*1 475*	*1 317*	*1 265*	*1 242*	*1 214*	*1 371*
IsiNdebele	2	0	1	0	1	2
SeSotho	52	44	34	29	41	16
Sepedi	48	28	16	16	24	31
SiSwati	6	4	1	5	4	5
XiTsonga	21	27	26	23	53	34
SeTswana	128	39	16	15	8	16
TshiVenda	10	19	22	37	35	18
IsiXhosa	51	41	34	54	30	48
IsiZulu	98	74	57	92	63	122
Other African languages	42	39	61	61	29	62
Subtotal	*458*	*315*	*268*	*332*	*288*	*354*
Total	**1 933**	**1 632**	**1 533**	**1 574**	**1 502**	**1 725**

Source: DHET (2012e)

The Higher Education Act (No. 101 of 1997) in Section 21 (2) provides for the Minister to determine language policy for higher education in the country. It provides that, subject to the development of policy by the Minister, the councils of public universities, with the concurrence of their senates, must determine the language policy of a university and must publish and make such policy available on request.

In 2002, the DoE developed and promulgated the *Language Policy for Higher Education* (MoE 2002). The policy seeks to promote multilingualism in institutional policies and practices. It provides for

> the simultaneous development of a multilingualism environment in which all languages are developed as academic and/or scientific languages while at the same time ensuring that the existing languages of instruction do not serve as a barrier to access and success. (MoE 2002: 5)

The policy notes that

> the role of language and access to language skills is critical to ensure the right of individuals to realise their full potential to participate in and contribute to the social, cultural, intellectual, economic and political life of South African society. (MoE 2002: 4)

The report of the Ministerial Committee appointed to investigate the development of Indigenous African Languages as Mediums of Instruction in Higher Education (also known as the 'Ndebele Committee'), published in 2005, recommended that African languages be developed into languages of learning and teaching in higher education institutions (MoE 2005). The report provides a framework for the development of institutional language policies, with a particular focus on the development of African languages.

The 2008 *Report of the Ministerial Committee on Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions* (DoE 2008b) highlights the development of African languages at universities. The report notes the continuation of challenges faced by students who are not English first language-speakers at universities. It also indicates that the implementation approach to the parallel-medium language policies that are in place in a number of historically Afrikaans-medium institutions "discriminated against black students".

The Green Paper for Post-school Education and Training in South Africa (DHET 2012d) indicates that the potential demise of African languages poses a threat to linguistic diversity in South Africa. Many African language departments at universities have closed down due to insufficient resources and diminishing student numbers.

The DHET's Strengthening Foundation Phase Teacher Education Programme is supporting universities to develop Foundation Phase initial teacher education programmes that will prepare teachers to use African languages as medium of instruction, as well as to develop literacy in the African languages. Universities will offer appropriate languages suited to the context in which the majority of their graduates are employed.

The new teacher education qualifications policy, *The Minimum Requirements for Teacher Education Qualifications*, was gazetted by the Minister of Higher Education and Training on 15 July 2011 (MHET 2011a). The policy stipulates that new Foundation Phase and Intermediate Phase teachers must be able to offer any one of the official languages as a first language teaching specialisation. Students who select English or Afrikaans as a first language teaching specialisation must study an additional official language, other than English or Afrikaans, in order to become conversationally competent at a basic level in that language (MHET 2011a).

The Minister of Arts and Culture tabled the Official Languages Bill, which was discussed in parliament on 10 August 2012. The passing of this Bill will compel government departments and entities to provide services and information to the people of South Africa in the official language of their choice. Government aims to promote the equitable use of all official languages and, in the long run, endeavours to equally promote the use of South African sign language. The Bill contributes significantly to the effort to promote multilingualism, as South Africans will now have an opportunity to use the official language of their choice in interacting with government. The Bill provides for the establishment and functions of a national language unit and departmental units. Section 6 of the Constitution of the Republic of South Africa (1996) identifies 11 official languages but also obliges the state to take practical and positive measures to elevate the status and advance the use of indigenous languages. In terms of the Bill, language policies of national government departments should identify at least three official languages to be used for official purposes.

The development of African languages is clearly a complex issue; and it will take a number of years, and co-ordination and commitment from different stakeholders, as well as additional funding, to improve the current situation in our schools and universities.

iii. Possible policy directives

The DHET envisages a cross-disciplinary approach that concretises African languages as part of the formal programmes of institutions with targeted resources, materials and support. Some universities require that students studying in, for example, medicine or social work take a course in an African language. The extension of such a policy will be encouraged, and the DHET will investigate how to give effect to such practices.

In order to do justice to the language policy of the Department of Basic Education and to ensure that African children can be taught in their home language in primary schools, there is a need for universities to train teachers to use African languages effectively as medium of instruction. One way of ensuring better communication among all South Africans, as well as raising the status of African languages in our country, is to encourage students to undertake at least one indigenous African language course in their degree or diploma programmes. The DHET will engage with universities to find ways in which this can be done in a systematic fashion.

iv. DHET infrastructure and efficiency funding allocated for the development of African languages

One of the funding categories that has been introduced in the infrastructure and efficiency grant for the period 2012/13–2013/14 targets the development of African languages, humanities and social sciences with an allocation of R201 million. As for most categories, the applications have far exceeded the amount available. Applications received for the development of African languages include requests for a language resource centre, multilingual signage and website, language laboratories, upgrading of the interpreting laboratory and development of audio-visual production facility for recording of lectures, new computer laboratory for the African languages and social sciences, and the development of

isiXhosa into an academic language. Allocations to specific projects in specific universities were due to be finalised by early September 2012. It is anticipated that this funding will contribute positively to the development of African languages and should continue as part of the infrastructure and efficiency grant over the MTEF period.

v. Inputs and submissions received from role-players

a) Language of instruction and communication

Most of the universities recognise the existence and importance of the 11 official languages and acknowledge their commitment to promoting all of the languages as academic languages. The responses from institutions on their language policies confirm that English is the dominant language of instruction and communication. At five of the South African higher education institutions, Afrikaans as well as English is used, in parallel or dual mode of instruction. One institution also offers modules in Afrikaans if there is sufficient demand. With the exception of one, the universities gave no clear indication that any of them are considering an African language as a language of instruction. The exception is a university that stated the intention of developing isiZulu as a language of instruction. This university has already commenced special projects on isiZulu curriculum development, translation of materials and development of textbooks.

For open and distance learning the major costs for dual-medium language are associated with the development of course material, and with translation and editing. UNISA offers 943 courses in both English and Afrikaans: 686 087 enrolments for first language and 70 000 for second language.

Most of the institutions use two or three languages for internal and external communication and signage, English always being one of the languages, and Afrikaans or the regional African language the second and/or third language. At universities where tuition is also offered in Afrikaans, that language is included as one of the languages used for internal and external communication.

b) Steps taken to implement universities' language policies

Steps taken to implement universities' language policies to varying extents include the following:

i. Presence of formal structures such as the appointment of a Director: Language Planning and Development; the appointment of a Planning Officer; and the appointment of a University Language Board, to manage the implementation of language policies.

ii. Appointment of institutional and faculty co-ordinators to oversee the implementation of the policy.

iii. Conducting of institutional language audits.

iv. Devolution of the institutional language policy to faculties, with the responsibility to develop faculty language policies and oversee implementation of the policies.

v. Review of existing policies.

vi. Setting up of support structures to assist students and staff with translation, proof reading, and interpreting of study material, assignments and research projects.

vii. Development of vocation-specific African language courses and terminology.

viii. Offering of both credit-bearing and non-credit-bearing courses in some of the African languages as part of the curriculum of certain programmes and professional disciplines, with the aim of offering students the opportunity to learn an African language.

ix. Offering of short courses in African languages to students and staff.

x. Provision of glossaries to students – the glossaries are in two or three different languages, usually English, Afrikaans and a regional African language.

c) Funding of the implementation of language policies

All of the universities currently fund the activities associated with managing and implementing their language policy, mainly from the core budget. Some of the institutions indicated that they have applied for additional funds from the DHET through the infrastructure and efficiency grant. A few universities have also received funding from

external funding entities such as SANTEP (the South Africa-Norway-Tertiary Education programme), provincial education departments (in the form of bursaries for postgraduate studies in African languages) and the appointment of a SARChI (South African Research Chairs Initiative) chair to consolidate the university's language policy implementation for the 2013–17 period.

d) Cost estimates for conducting parallel and dual-language mode of instruction

Two of the universities have submitted cost estimates for conducting parallel and dual-language mode of instruction. The most comprehensive analysis submitted shows the estimated current additional cost as R65.85 million for parallel mode of instruction for 516 modules. If the 539 dual-language mode modules were to be presented in parallel mode the model estimated that a further amount of R101.7 million would be needed. If the university were to move entirely to parallel mode of instruction the cost would be of the order of R167.5 million.

e) Proposals for the development of linguistic diversity in South African universities

A proposal was received indicating that a) the report of the Ministerial Committee appointed to investigate the development of Indigenous African Languages as Mediums of Instruction in Higher Education, published in 2005 (MoE 2005), and b) the current national initiatives on the position of African languages as languages of higher learning, should be used as a starting point. The current languages of higher learning (English and Afrikaans) should be included, with a developmental approach being adopted with regard to African languages. The suggestion was made that some universities, on a voluntary basis, could make available institutional energies, capacity and expertise in order to act as 'anchor developers' and implementers of certain working and teaching languages in their environments. A formal agreement should be concluded in terms of the structured development and implementation of the chosen languages, with the so-called anchor universities acting as centres of excellence in the said languages. The suggestion was also made that the DHET should provide an earmarked multilingual grant for such an initiative.

vi. Conclusion

There is a clear policy shift and government support in favour of the development of multilingualism. Various initiatives are under way, most notable among these being the work of the Advisory Panel on African Languages in Higher Education. Most of the universities are committed to promoting all of the official languages as academic languages. Language policies are in place in most of the universities and implementation is carried out through various institutional arrangements. Graduate numbers in African languages are disappointingly low and are on the decline, and therefore a focused and all-encompassing effort is needed to advance the development of African languages.

Offering modules in dual mode is a very expensive endeavour and would, within the available resources, be an enormous challenge to implement on a large scale. Initiatives such as including an African language course in diplomas and degrees, and the development of centres focused on the development of African languages, appear to be more realistic and affordable initiatives towards the development of African languages. Based on the cost estimated of R167.5 million to move to parallel mode of instruction (as indicated in d, above), it is envisaged that the move to an African language as a language of instruction would be very costly.

One of the papers presented at the round-table in October 2010 focused on the historical development of Afrikaans as language of teaching and scholarship. The paper highlighted the resilience of Afrikaans as a language despite the early onslaught by British colonial authorities in an attempt to stem its development. The paper argued that a key lesson that could be drawn from the development of Afrikaans is that a language can only be preserved and maintained if its speakers are determined to keep it and, thus, constantly use it in their day-to-day operations. The paper also argued that dedicated state support is key to the development of a language.

The development of African languages at all levels needs the same resilience that was used to develop Afrikaans as a language of teaching and scholarship. Plans and initiatives however need the understanding, support and co-operation of various stakeholders.

vii. Recommendations

Based on the available policy directives and submissions received, the Committee makes the following recommendations:

a) The Committee supports the DHET's initiative, as indicated in the Green Paper (DHET 2012d), to encourage students to undertake at least one African language course in their degree or diploma programmes. It is proposed that the nature of this course focus on practical, conversational skills to enable the student to communicate easily on a day-to-day basis.

b) The allocation for the development of African languages in the DHET infrastructure and efficiency grant should continue over the MTEF. However, additional funding should be sought or a specific grant should be created for the development of African languages in the following areas:

- African languages as the languages of learning and teaching in universities.
- The inclusion of African languages in curricula.
- The production of Foundation Phase teachers who are competent in an African language.
- The expansion of African language courses for students, which provide practical, conversational skills to students.

c) While the Advisory Panel on African Languages in Higher Education concludes its work and provides the Minister with a report and recommendations, the Committee recommends that the Panel advise on the criteria for the allocation of the funds in the infrastructure and efficiency grant that targets the development of African languages.

7.8 African Institute for Mathematical Sciences

The African Institute for Mathematical Sciences offers a postgraduate diploma in mathematical sciences on behalf of three universities and their higher education activities, in essence preparing students in Africa for academic and research careers in the quantitative sciences. The postgraduate diploma builds core mathematical skills common to all modern science; gives exposure to cutting-edge fields, especially those of relevance to African development; and provides intensive training in scientific paper and report writing and in presentational skills. According to testimony, the diploma is internationally recognised as a model for postgraduate training. For South Africa, this is also an important initiative of the New Partnership for Africa's Development (NEPAD).

Students of the African Institute for Mathematical Sciences have been registered through one of the three Western Cape universities for the Postgraduate Diploma in Mathematical Sciences. These universities have formal Ministerial approval to offer this postgraduate diploma, which can be completed in one academic year of study. The universities that offer the African Institute for Mathematical Sciences postgraduate diploma in mathematical sciences are Stellenbosch University, University of Cape Town and University of the Western Cape.

The Minister has agreed to the continued funding of this programme (currently approximately R4.4 million) on the following conditions:

a) The African Institute for Mathematical Sciences should maintain an annual new intake of at least 53 students, and the intake of South African students must be increased. Up to 2011, the programme only attracted students from other African countries, but in 2012, 11 South African students enrolled for the programme.
b) The participating universities should assist students, once they have graduated from this diploma, with funding for a masters qualification and in so doing retain some of the skills required for the teaching and learning of this scarce skill area.
c) The funds allocated by the Minister are to be used for costs involved in the delivery of the Postgraduate Diploma in Mathematical Sciences. Funding for research should be sourced from other donors, such as the NRF.
d) The African Institute for Mathematical Sciences should build more effective partnerships with South African universities, to increase the involvement of their academics.
e) The Council of the African Institute for Mathematical Sciences must submit an annual progress report to the DHET. This report must include information on student enrolments and success rates. The release of funds for the next financial year would depend on satisfactory academic and financial progress reports received for the previous year.

This is a flagship project of the Minister and is supported by the Committee.

7.9 Access to higher education for students with disabilities

i. Introduction

The Constitution of the Republic of South Africa (1996) prohibits all forms of unfair discrimination and guarantees fundamental rights to all citizens. Equally, the Constitution entrenches the right to equality and the provision of measures to redress past imbalances. One of the traditionally marginalised groups in South Africa, and specifically in higher education, is people with disabilities. The attainment of equity of opportunity and access to higher education, as envisioned in Education White Paper 3 (DoE 1997) and the NPHE (MoE 2001), requires that universities open up access to traditionally underrepresented groups while, as implored by the Constitution, ensuring that past inequalities are redressed. Disabled persons, as White Paper 6 on special needs education (DoE 2001) indicates, have often been discriminated against and denied access to essential services. The NPHE commits higher education institutions to increasing access of learners with special education needs.

According to data collected in the 2001 Census, South Africa then had 2 255 982 people with disabilities, constituting a prevalence rate of 5% (StatsSA 2003). In higher education institutions, HEMIS data (Table 72) shows that the number of students with disabilities in 23 public universities for 2011 was 6 056 students, which represents less than 1% of the 2011 total student enrolment of 938 200. Based on this data, it is clear that much still needs to be done to ensure greater access for students with disabilities.

Table 72: Enrolment in higher education, by students with disabilities (2005–11)

Disability	2005	2006	2007	2008	2009	2010	2011
Communication (talking, listening)	76	67	79	86	91	134	166
Disabled but unspecified	884	702	941	951	983	937	1 057
Emotional (behavioural or psychological)	96	89	97	95	144	166	188
Hearing (even with a hearing aid)	208	257	293	342	352	385	464
Intellectual (difficulties in learning)	98	238	328	420	537	708	812
Multiple	27	41	48	85	49	51	62
Physical (moving, standing, grasping)	4 112	799	931	1 023	1 057	1 287	1 510
Sight	1 066	2 855	2 547	2 081	1 721	1 689	1 757
Total	**6 567**	**5 048**	**5 092**	**5 083**	**4 934**	**5 357**	**6 056**

Source: DHET (2012e)

ii. Creating inclusive universities

The data in Table 72 (above) seems to support Howell's (2005) finding that, for a long time, higher education remained largely out of reach for the majority of disabled people in South Africa. Howell's (2005) study identified several challenges obviating the accelerated participation of disabled people in higher education. These challenges include low participation in schooling, which consequently means that many disabled persons do not stand a chance of accessing higher education. Another challenge is the "existing capacity of the higher education system to respond to the needs of students with disabilities who have gained entry to institutions" (Howell 2005: 9). The limited capacity to respond to the needs of students with disabilities is mainly due to inadequate infrastructure, and lack of appropriate teaching and learning resources and support services for students with disabilities. For these reasons, meaningful access to higher education to students with disabilities cannot be limited merely to providing opportunities for such students to enter higher education institutions; it also requires that attention be paid to their participation within the system, by providing the requisite infrastructure and support services.

The 2001 NPHE (MoE 2001) recommends the use of earmarked funds to realise policy objectives such as increased access for poor students and students with disabilities. This recommendation is further reinforced by the call of White Paper 6, on special needs education, for the attainment of equity in higher education for students with disabilities. Within this context, NSFAS introduced a bursary scheme in 2008 for students with disabilities studying at any of the 23 public universities. This bursary programme complemented the funding provided by the Department of Labour through the NSF to students with disabilities. The NSFAS bursary programme is aimed at providing financial support to students with disabilities who are financially challenged but academically able. It is intended to open opportunities for further study in higher education and provide the necessary additional teaching and learning (curriculum) support for students to overcome any barriers to learning that may result from their disability.

Students with disabilities are eligible for financial aid under two categories: a) DHET Disability Funding, and b) the NSF Scarce Skills and Disability Funding. Under both categories eligible students qualify for full bursaries rather than student loans. NSFAS

funding to students with disabilities includes a component that enables students to acquire assistive devices, which is intended to help these students to succeed in the higher education environment. Unfortunately, funds provided to support students with disabilities have not always been fully utilised. Data provided by NSFAS shows that this is the only bursary category where some of the allocated funds have been returned to NSFAS due to the low uptake and utilisation by universities – a trend that shows, inter alia, that more still needs to be done by universities to ensure greater disability access.

The *Report of the Ministerial Committee on Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions* (DoE 2008b) acknowledged the need for enhanced efforts to ensure greater access and participation by students with disabilities. The report showed a general recognition of slow progress in addressing the needs of the disabled, in terms of both physical infrastructure and educational support structures. This point was reiterated by the Minister for Higher Education and Training in his 2010 address to the Higher Education Disability Services Association gala dinner at the University of the Free State,[14] where he indicated that while a great deal of work has been done in the past few years to prioritise access for and improve services to students with disabilities at universities, there remain significant challenges to be overcome in the system. The challenges include a lack of coherence in the higher education sector regarding what comprehensive disability support in universities entails. The Minister was also at pains to emphasise that disability should not be an added disadvantage for students already disadvantaged by a lack of funding and other barriers to success in higher education.

At institutional level, South African universities have implemented various strategies geared towards creating inclusive institutions. Howell's (2005) study shows that many universities have promulgated policies or guidelines for supporting students with disabilities, and provide teaching and learning support to these students, including the establishment of disability units or centres. However, existing facilities do not always address different types of disabilities, and are not always adequate and of good quality. The initiatives and structures

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[14] *Address by the Minister of Higher Education and Training Dr Blade Nzimande at the Higher Education Disability Services Association (HEDSA) gala dinner at the University of the Free State*. South African Government Information. Available from: http://www.info.gov.za/speech/DynamicAction?pageid=461&sid=13302&tid=20153, accessed October 2012.

in place at the various institutions vary considerably in the work they do and the services they offer. In many cases, universities and their disability units experience resource constraints that limit the nature and extent of the services they can offer. More importantly, support services to students with disabilities, where they do exist, tend to operate separately from or have limited collaboration with broader teaching and learning support initiatives at the institutions. The inability to provide sufficient teaching and learning support services to students with disabilities was mainly blamed on cost constraints and insufficient staff (also related to cost constraints). The Ministerial Report on Student Housing (DHET 2011a) found little evidence of efforts to make student residences accessible to people with disabilities. The report points out that few student residences have access to wheelchairs, or user-friendly toilets and bathrooms. To support universities in creating inclusive campus environments, the DHET made allocations to all universities in 2012 for the improvement of disability access. The Department has also asked universities to work towards providing universal access in all new infrastructures. This implies making barrier-free built environments, both inside buildings and externally in the open space system. Underlying this imperative is the need for each university, among other things, to undertake a comprehensive and up-to-date disability audit to inform campus master-planning strategies. It is hoped that the DHET's funding for improved disability access will continue.

iii. Summary and recommendations

Although universities have undertaken valuable interventions to improve the access and participation of students with disabilities in higher education, much still needs to be done if a meaningful impact is to be realised. It should be emphasised that universities have a responsibility to provide teaching and learning facilities that meet the needs of students with disabilities. Equally, universities are required to ensure the physical accessibility of buildings and facilities, and the creation of conducive campus environments that will guarantee meaningful and fulfilling university experiences for students with disabilities. The expansion in participation rates envisaged in the Green Paper for Post-school Education and Training (DHET 2012d) is meant for all students, including those with disabilities, who have the academic potential to access post-school education. Barriers to higher education access and participation for students with disabilities should therefore be removed.

The Committee reiterates the recommendation made in the NSFAS review report (DHET 2010a) that all students with disabilities who meet the academic requirements for higher study and who are in need of financial aid should qualify for NSFAS funding. Furthermore,

the Committee supports the initiative by the DHET to provide funding for infrastructure development and improvement of disability access across all universities.

8 Research and innovation

8.1 Research output grant

i. Background

Figure 19 (below) provides a graphical representation of South Africa's research performance. According to the Department of Science and Technology (DST) and the National Research Foundation (NRF) (DST & NRF 2012), the South African research system is characterised by the following:

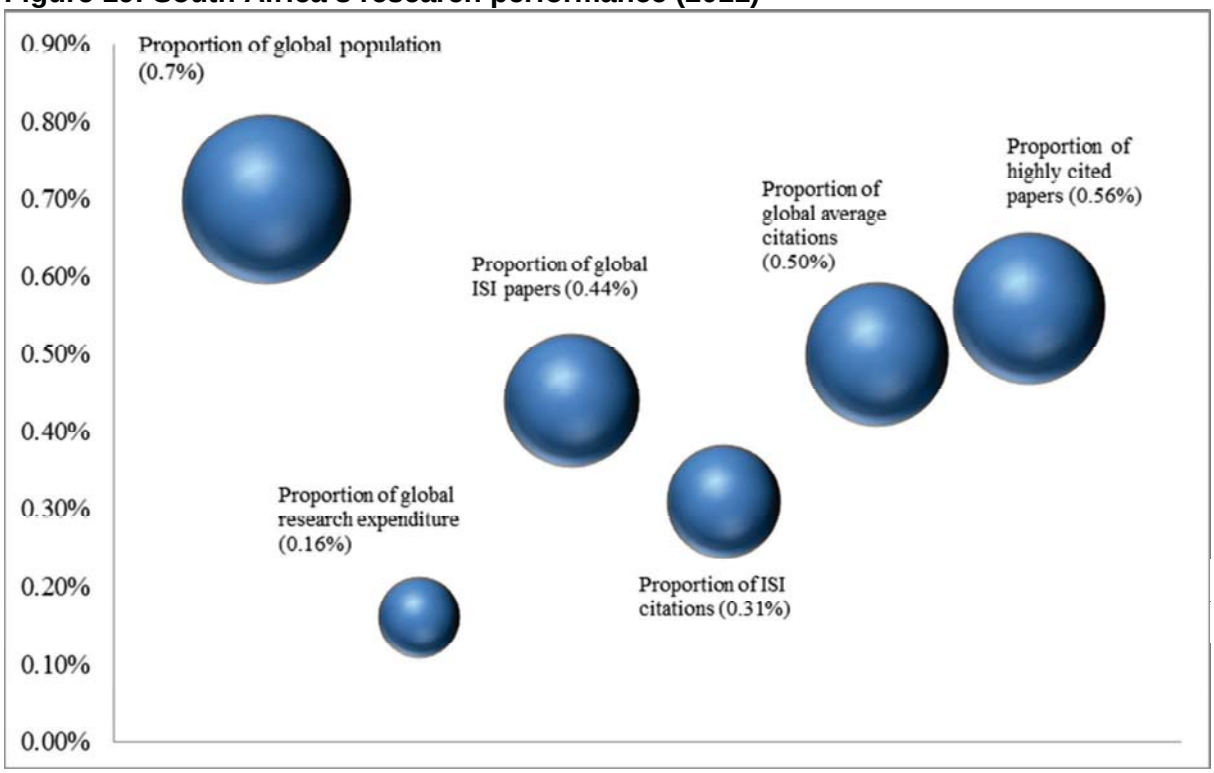
a) Below-par spending.
b) Outputs that double the current spending investment.
c) Lower citations than outputs.
d) An average citation rate per paper.
e) A higher-than-expected number of highly cited papers.

These characteristics have the following consequences:

a) Below-par spending is restricting research performance.
b) Significant parts of the science system are driven by emphasis on the number of outputs rather than on quality (this is suggested by the lower citation levels).
c) The system does harbour significant strengths, as reflected in highly cited papers.
d) There are pockets of excellence in a landscape of average performance.

It can thus be concluded that government needs to spend more funding on research if development is to be geared towards a knowledge economy, and that the quality of research outputs needs to be improved.

Figure 19: South Africa's research performance (2011)



Source: DST & NRF (2012)

The current research funding framework was adopted by the DHET in October 2003 and came into effect in the 2004/05 financial year. Compared to the preceding framework, a number of very significant changes and additions were made with regard to the funding of research outputs. The most important of these were the following:

a) Ring-fencing a dedicated amount for rewarding research and knowledge production at South African universities. An immediate consequence of this decision was that the monetary value of a research subsidy unit increased (more than threefold between 2004 and 2005) and continued to increase to current levels of around R120 000 per subsidy unit.

b) The expansion of the notion of 'research output' to 'knowledge output', with the inclusion of 'research masters' and 'doctorate' graduates to qualify for research subsidy.

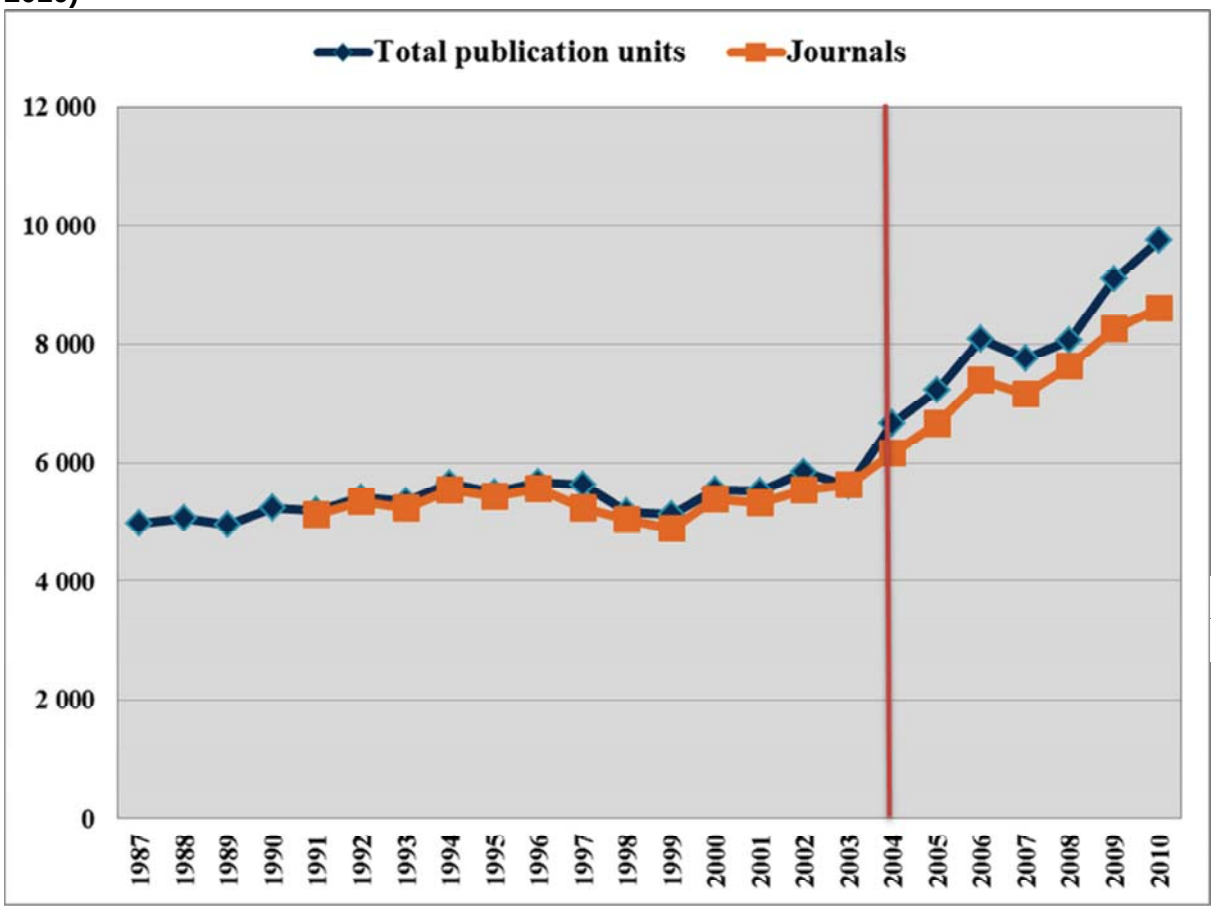
c) Expanding the journal lists that determine which peer-reviewed journals qualify for subsidy purposes. More specifically, the addition of the IBSS (International

Bibliography of the Social Sciences) and a number of local South African journals meant that the coverage of journals in the social sciences and humanities improved.

ii. The impact of the current funding framework

There is widespread consensus among scholars in the country (Mouton 2012b; Pouris 2012) that the adoption of the new funding framework (and the concomitant increases in subsidy amounts) is the most plausible explanation for the significant increase in research output, in the form of journal and publication units, by South African universities since 2005 (see Figure 20).

Figure 20: Journal papers (equivalents) and total research publication outputs (1987–2010)



Source: Mouton (2012b: 1)

What is perhaps even more noteworthy is that the substantial increase in the volume of research outputs applies to the higher education sector as a whole. Every university and

university of technology, with the exception of the University of Limpopo, increased its output of articles in peer-reviewed journals between 2004 and 2010. This is a significant achievement, as the increase in output applies both to so-called historically advantaged and disadvantaged universities (Table 73, below). One could argue that this provides strong evidence for the value of a performance-driven reward system, as it incentivised the majority of universities in the country to improve their research output production.

Pouris (2012) mentions that research publications in South Africa are on an ascending path and that the country's world share of publications is on the verge of reaching its highest contribution in history (0.65% in 2010). During the period 2000–10, South Africa improved its international ranking (in terms of world share of publications) by two positions, and in 2010 was ranked 33rd in the world.

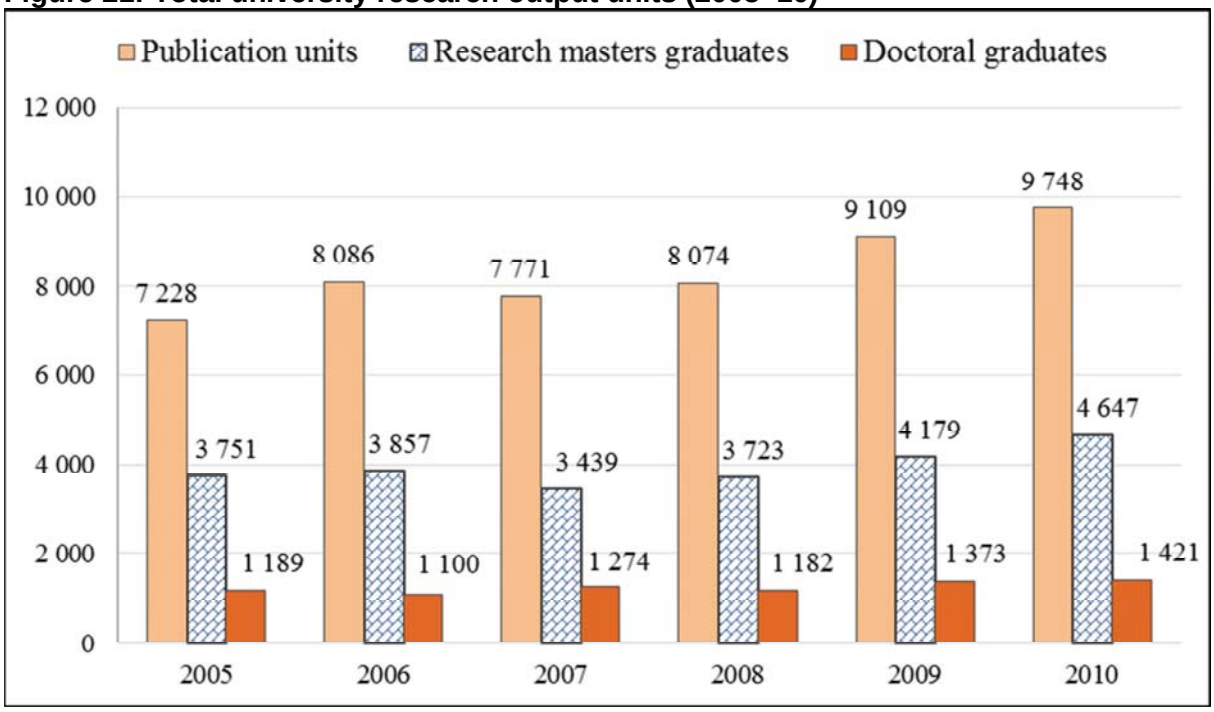
Table 73: University article outputs (2005–10)

Institution	2005	2006	2007	2008	2009	2010
UP	1 007.54	1 102.02	1 084.11	1 109.29	1 116.29	1 087.93
UCT	754.70	792.90	914.70	958.59	1 038.06	1 071.70
UKZN	859.30	977.80	793.50	917.36	1 033.93	1 030.48
SU	789.39	895.91	828.74	879.56	947.21	894.85
Wits	712.20	758.40	807.02	767.75	827.29	833.83
UNISA	502.25	564.70	521.75	613.71	593.26	680.83
UFS	396.37	453.20	451.84	396.13	469.66	451.41
UJ	300.80	360.77	330.64	354.99	412.64	515.75
NWU	318.38	351.50	358.21	471.33	411.81	510.76
RU	232.60	248.52	258.68	287.82	302.64	292.38
UWC	159.10	178.30	211.00	214.28	248.15	240.53
NMMU	183.72	172.20	165.04	156.44	195.89	200.92
UFH	51.24	63.34	62.50	78.45	123.88	132.64
CPUT	51.90	47.10	42.10	61.68	101.81	129.84
TUT	69.90	82.00	80.50	111.08	100.74	146.74
UZ	44.27	53.91	44.98	64.68	69.78	64.69
UL	105.97	107.01	97.37	83.52	73.77	89.07
Univen	26.90	18.69	17.51	32.61	54.35	65.19
DUT	20.18	31.00	31.50	23.45	46.32	41.70
VUT	15.14	16.42	16.00	17.34	31.40	36.48
CUT	25.23	37.21	28.30	23.90	33.04	31.71
WSU	33.32	22.23	15.85	12.80	20.86	46.90
MUT	1.50	5.00	1.41	1.41	3.83	7.03
Total	**6 661.90**	**7 340.13**	**7 163.25**	**6 679.58**	**7 218.55**	**8 603.36**

Source: DHET (2012e)

Table 73 shows that the most productive universities (University of Pretoria, University of Cape Town, University of KwaZulu-Natal, Stellenbosch University and University of the Witwatersrand) all increased their research outputs at moderate rates. The biggest growth, however, was recorded for the medium- and smaller-sized universities, such as University of Johannesburg, North West University, University of the Western Cape, University of Fort Hare and University of Venda. Equally satisfying are the significant increases in output of most of the universities of technology: Cape Peninsula University of Technology, Tshwane University of Technology, Durban University of Technology and Vaal University of Technology all recorded noteworthy increases in their research outputs.

Figure 21: Total university research output units (2005–10)



Source: DHET (2012e)

The total research output units for Figure 21 show the research publication units, research masters graduates and doctoral graduates. The huge increases in research publication units have already been noted. As mentioned in Section 4.3(e)[15] of the current report, the slow increases in the numbers of doctoral students as well as the high dropout rates have been

[15] Goal 7: Graduate outputs, and especially Table 10 in that section.

disappointing. This situation needs to be radically improved, especially given the huge need for doctoral graduates, not only for research and innovation but also to form the next generation of academics to be trained. The delivery of research masters graduates has also been erratic, and growth in research masters graduate numbers has also been much lower than growth in research publications. Table 74 shows, according to race, the doctoral degrees awarded for the period 2005–10. During this period the total percentage of doctoral degrees awarded to African, coloured and Indian students increased from 41.4% to 51.7%, while the percentage awarded to white students decreased from 58.6% to 48.3%.

Table 74: Doctoral degrees awarded, by race and gender (2005–10)

Year	Black (African, coloured, Indian)				White				Total graduates
	Female	Male	Total	Total (%)	Female	Male	Total	Total (%)	
2005	169	323	492	41.4	355	340	695	58.6	**1 187**
2006	176	303	479	43.7	298	320	618	56.3	**1 097**
2007	194	386	580	45.6	335	356	691	54.4	**1 271**
2008	195	339	534	45.3	323	321	644	54.7	**1 178**
2009	205	470	675	49.2	366	331	697	50.8	**1 372**
2010	251	479	730	51.7	340	341	681	48.3	**1 411**

Source: DHET (2012e)

The European Commission (2011) emphasises that doctoral training is a primary progenitor of new knowledge, which is crucial to the development of a prosperous and developed society. Developed economies rely on new knowledge and highly skilled knowledge workers to feed a process of continual innovation. It is essential to ensure that enough researchers have the skills that will be demanded by a knowledge economy. The Commission observes that more and more universities in Europe are setting up doctoral schools that deliver structured programmes for cohorts of students. The majority of universities in Europe have set up doctoral schools or programmes across several or all of their departments/disciplines. This might be worth investigating as a way of improving doctoral study outputs in South Africa.

iii. A highly differentiated sector in terms of knowledge production

Despite the fact that the university sector as a whole has evidently benefited from the introduction of the current funding framework, we still have a very differentiated higher education system as far as knowledge production is concerned. In a presentation[16] to the Committee, Prof. Johann Mouton of the Centre for Research on Evaluation, Science and Technology (CREST) of Stellenbosch University indicated that the sector is differentiated in terms of at least the following six dimensions (Mouton 2012b):

a) Volume of research production.

b) Shape of research production (differences in distribution of output by scientific field).

c) Site of publication (comparative journal indexes).

d) Patterns of research collaboration.

e) Research impact (high or low visibility or recognition) as measured by citation impact.

f) Demographics: differences in distribution of output by gender/race/qualification/age.

What are the most likely explanations for such a highly differentiated system? Some of the 'causes' of these differences reflect the path dependence introduced by historical factors such as age of institutions (older universities have an advantage), the impact of political and ideological factors, and differences in institutional missions and organisational structures. As far as the latter is concerned, Mouton (2012b) showed how the organisational structure of an institution (for example, the presence of Faculties of Law and Theology, or having a Medical School) has a huge impact on the shape of knowledge production at that institution.

Other differences are the result of institutional responses to international and national policies, strategies and incentives. South African universities are generally very responsive to international shifts and developments (such as, for example, the advent of international rankings, the competition between the Web of Science and Scopus, and the increase in student mobility and flow of postgraduate students to our universities). The nature and content of these responses are sometimes reliable indicators of the presence of a well-established research culture and good academic and research leadership at an institution.

[16] 8 August 2012

This is perhaps best illustrated by the fact that the best-performing universities in the country (as far as research and postgraduate output are concerned) have also been the most effective at generating additional, third-stream incomes to support their research and innovation enterprise.

One can therefore argue that ‘excellence’ in research production can be ‘steered’. In a highly differentiated system such as ours, however, the steering instruments also need to be differentiated, and customised to meet the different needs and challenges of the institutions. The current research funding framework has been very effective in improving overall knowledge output. However, there is increasing evidence that the framework has not managed to impact on matters related to research excellence and quality (and it was not intended to do so). In fact, there is anecdotal evidence that the imperative to increase output and volume in research has come at the expense of the pursuit of excellence. Non-virtuous practices in research (writing shorter papers, submitting manuscripts to local journals with high acceptance rates rather than international journals, excessive publication by editors in their own journals, and so on) are becoming more prevalent. It is now time to make certain changes to the funding framework that would ensure that *measures related to quality are introduced* while maintaining the current positive impact on research production.

iv. NRF support for research development and research outputs at universities

The NRF supported 16.2% of all enrolled doctoral students, 7.6% of all enrolled masters students and 4.7% of all B Tech and honours students through NRF grants in the year 2011/12, and thus constitutes a very important partner in the funding of postgraduate studies (see Table 75, below). The current cost of the bursaries totals R308 million per year, and supports 8.8% of postgraduate students, although the individual bursary values are low. In order to substantially increase the per capita bursary allocations, to make them more competitive with entry-level salaries, an additional amount of R620 million would be needed per year. The NRF also currently provides R120 million for research support, which is supplemented with R140 million provided by the universities.

In the funding allocations, HDIs are specifically targeted in supporting emerging researchers and the next-generation researchers. The NRF considers this crucial to supporting emerging strengths at HDIs. According to the NRF, the South African higher education system is

small, and the research capacity of the HDIs needs to be developed to drive our national competitiveness. Nevertheless, the main beneficiaries of DST and NRF funding are the historically advantaged institutions, due to their research strengths.

Table 75: Number of students supported by the NRF (2007/08–2011/12)

Qualification type	2007/08		2008/09		2009/10		2010/11		2011/12
	Number	% of national registrations	Number	% of national registrations	Number	% of national registrations	Number	% of national registrations	Number
B Tech/ honours	1 402	3.2	1 215	2.5	1 696	3.2	2 718	4.7	1 723
Masters	2 437	5.9	2 475	5.9	2 373	5.4	3 566	7.6	3 564
Doctoral	1 368	13.6	1 370	13.7	1 384	13.1	1 937	16.2	1 979
Post-doctoral	232		222		304		405		402

Source: DST & NRF (2012)

The DST & NRF (2012) identified the following gaps in the funding of research at universities:

a) Funding is needed for entry-level research infrastructure.
b) There is a lack of funding for the maintenance and operation of and technical support for advanced research infrastructure, yet these are necessary for optimal use of research infrastructure and sustainability of research.
c) University research funding should strengthen national scholarly journals, and there needs to be increased visibility of South African scholarly research. Funding should focus on and encourage publication in high-impact journals.
d) There should be national licensing of selected e-journals and equal access to information across all public universities.
e) There is lack of support to innovation offices at universities, in particular at HDIs.
f) More funding is needed for post-doctoral students, and their status needs to be improved.
g) Funding should continue to be used to further strengthen the research-intensive universities, in order to increase knowledge production and innovation.
h) There should be incentives for the established research universities to contribute to capacity development at HDIs, for example, shared supervision and shared authorship.
i) There should be incentives for universities to use national facilities and science council infrastructure in student training, in order to expand training infrastructure.

v. Inputs received from role-players

The following inputs were made by various role-players in university education.

Types and size of grant

1. The introduction of research input grants needs to be considered. These should be weighted to target key sectors and programmes associated with the national development agenda in a manner similar to the weighting of CESM categories.
2. There is a need to move to an output-driven system, and a larger percentage of the block grant should be allocated to research outputs.

Weights for scholarly books

1. The increased weight of scholarly books is much in need of consideration. Scholarly books can take years in preparation and the current five units often do not match the time required for the scholarly research and the rigorous process of peer review required. This applies equally to book chapters, and consideration could be given to increasing the unit value of chapters in books. It is argued that the weight of research book chapters should be changed so that they are not simply a fraction of the entire book's length, because this is simply a quantity argument and neglects quality. Rather, they should be considered as equal to journal publications as long as the peer review component is included. The quality can also be assessed by examination of the publisher.

Increased incentive for masters and doctoral graduates

1. Given the emphasis on PhD production and the knowledge economy, masters and doctoral graduates need to be much more strongly emphasised in terms of the research output configuration. It is also argued that the relative allocation for postgraduate output should be higher, compared to research publication output, primarily to balance timeframes and cost effectiveness of senior and highly qualified academic staff. The relative weight of masters and doctoral graduates does seem appropriately balanced between one unit per masters and three units per PhD. However, as the production of PhDs is a three- to four-year process, and in the light of

efforts to substantially increase PhD graduations, consideration could be given to increasing the value of the weight for doctoral graduates.

Additional weights for scarce skills, and relative costs

1. The weight of research outputs can be instrumental in strategic driving towards the development of certain areas. A larger weight can be assigned to outputs in fields deemed to be of strategic value, leading to a larger pool of funding being available, for example, for bursaries in these fields. These changes will result in a shift in institutional behaviour towards outputs and towards those areas that are of national strategic importance and that drive the national development agenda.
2. A weighting scheme taking into account the relative cost of research in the various categories of skills should be found, similar to the CESM categories for funding of teaching.

A weight should be factored in for quality

1. It is unfortunate that the current weighting model attaches little value to quality, other than recognising journals accredited as part of the Thomson Reuters Web of Knowledge (formerly ISI Web of Knowledge). It is argued that more emphasis on quality should be factored into the weighting model, because the impact of research depends far more on quality than on quantity. The science of bibliometrics now offers many independent and readily accessible measures of quality. Thus, it is argued, journal impact factor and book publisher hierarchy should be used to calculate accredited units for journal articles and research book and chapters.

2. On the links to costs, the subsidy for research publications gives the same amount of money to a publication in law or languages – which may have minimal research expenses over and above that of the researcher's salary – as it does to a publication in the sciences – which has laboratory costs, and may need a whole team of fieldworkers and laboratory technicians and so on. Unlike with the teaching input subsidy, where there is recognition of the differential costs, when it comes to research funding there is no comparable recognition of the differential costs. This has the perverse effect of steering research away from the expensive areas, towards the relatively cheap areas.

Weighting for scientific impact

1. Research publication outputs should also be weighted according to the scientific impact of the published research papers. Some universities apply an impact weighting factor in their internal performance management processes. The science councils and international ranking organisations, in allocating research funds, also take cognisance of the 'quality and scientific impact' of the research outputs of individuals and institutions.

Incentives for international collaboration

1. Research is often a collaborative activity and in some areas it is indeed exclusively collaborative. International collaboration is a vital consideration for universities, in order not only to enable them to conduct research that meets with international standards of quality but also to find solutions to South African and African problems. Unfortunately, the existing research output weighting model actively discourages collaboration and particularly international collaboration. It is proposed that, when researchers based at South African universities make substantial contributions to published, peer-reviewed work, the units be divided only among the South African authors, since the other research output units are lost, given that they are not paid to non-South African researchers.

Research output funding for patents

1. Patents in South Africa do not need to stand the test of uniqueness and are therefore not scrutinised through peer review. Thus they carry little weight in a research context. However, our science system is geared to be innovative, and patents are to be encouraged. For this reason it is suggested that the internationally defended patents (say in the USA or Europe) should attract funding at the same rate as peer-reviewed journal articles. The only condition to be added would be that they must also be registered as patents in South Africa.

Research outputs from the performing, creative and visual arts

1. There is widespread support for the recognition of outputs from the performing, creative and visual arts. Creative works that are subjected to public criticism, entered into the record for public scrutiny and use, and make a contribution to the

advancement of the knowledge in the field, are equivalent to research. The difficult part of the comparison is to decide upon equivalence and consequently the research output units.

2. A less cumbersome and complex approach than the one in the current DHET draft document for reviewing outputs from the performing, creative and visual arts is recommended, and more akin with the current system for books. Instead of each and every output being individually peer reviewed by two and in some cases three reviewers, an internal panel should be set up at each institution to review submissions made by researchers and then to forward the selected outputs to a DHET panel. Such an internal panel would consist of representatives from all creative disciplines at a particular institution, plus a number of external reviewers invited to sit on the panel. The pool of potential reviewers is just too small to make a workable system of peer reviewing of individual outputs in all provinces and at all institutions.

3. There should be a three-year window period for submission, to account for the slower dissemination and review time in the performing, creative and visual arts disciplines. In other words, even though an output could only be submitted once, the researcher has up to three years from the time of the work first appearing in the public domain to make a submission. This would offer greater potential for the submission to include post-production peer review. It is envisaged that the DHET would invite a number of international representatives to sit on the national panel each year to benchmark outputs and to provide quality assurance.

4. The opinion was also expressed that it is extremely difficult to conceive of and develop criteria for the outputs of the creative arts – in the form of fine art, theatre, literary fiction and poetry – and to duly accredit them. Efforts might be better directed towards assessing and widening the lists of accredited journals and to increasing the unit values for scholarly books and chapters.

vi. General

1. Critical review articles: To be invited to undertake a critical review of research in a particular field is indeed a privilege and often marks the standing that the author enjoys

in the community of peers. It is, therefore, argued that substantive and critical knowledge reviews that in themselves contribute to new knowledge and/or new interpretations of existing knowledge should be regarded as contributions to knowledge production. For this reason, they should attract support at the same level as peer-reviewed journal articles. Again, the impact factor of the journal should determine the quality and therefore the number of accredited units that such a critical review attracts.

2. For the most part, the universities of technology focus on applied research rather than fundamental/basic research, especially in the social sciences. It is proposed that contributions to professional industry publications, especially where such contributions are based on scholarly work, should get recognition as research outputs. Publications such as *Management Today*, *Financial Mail*, and *People Dynamics* are among the professional industry publications envisaged in this regard.

3. A re-evaluation of the journal lists was proposed, since there are highly acclaimed journals on other indexes, and on the Thomson Reuters master journal list.

4. Conference proceedings that are double-peer blind reviewed and published in non-accredited journals should also receive recognition.

vii. Recommendations

i. Funding allocations for research outputs

a) The research outputs in the system, especially research publications, have outgrown the available funding for research outputs, and in the financial year 2011/12 the actual Rand value of a research output unit dropped. It is therefore essential that more funding be allocated by Treasury to ensure that the success in increasing research outputs of universities is sustained and further incentivised.

ii. Further development of knowledge production through research publications

a) The current funding framework must be adapted to actively reward *excellence* and *quality*, rather than *quantity* alone. One way would be to follow international practice whereby the existing accredited journals are rated or ranked in terms of criteria such as citation impact. This practice is followed in Norway, where the Norwegian Research Council classifies journals into three categories and the amounts of research funding disbursed by the Council are linked to that classification. There are various journal impact ratings (e.g. SciMago, Thomson Reuters Web of Science) that could be used for such an exercise. However, the real challenge in the South African system is the fact that the majority of local journals (approximately 220 of the 295) are not included in citation indexes (Thomson Reuters Web of Science or Scopus) and therefore do not have an impact factor. This is also mostly true for the titles in IBSS.

If this recommendation is accepted in principle – that is, that a ranking of all accredited journals be introduced – a study would have to be commissioned to identify the fairest and most efficient way of implementing such a proposal. Such a study would be crucial, because introducing a ranking system that failed to take into account the contextuality of our system (and, specifically, the disproportionate number of journals in the humanities and social sciences) would be potentially disastrous for the future of the majority of local journals on the current list.

b. The Committee also recommends that the current journal list be expanded to include journals indexed in Scopus and SciELO (the Scientific Electronic Library Online). This would have the immediate effect of broadening the overall number of journals (by an estimated 10%–15%) and would specifically address the concerns of those fields (such as computer sciences) regarding the list of peer-reviewed conference proceedings (which are much better covered by Scopus).

c. The Committee recommends that the funding framework distinguish between three categories of journals, and award different subsidy-unit values for papers published in the different journal categories. The Committee proposes a three-fold classification of journals as follows:

Category 1: High-impact journals in the Thomson Reuters Web of Science, SciELO or Scopus (JIF >1.00).[17]

Category 2: Low-impact journals in the Web of Science, SciELO or Scopus (JIF <1.00).

Category 3: Journals with no impact factor.[18]

The Committee further proposes the following subsidy-unit values for papers published in the three journal categories above:

Category 1:	1.2
Category 2:	1.0
Category 3:	0.8

However, the Committee also recommends that a modelling study be done to test the effect of the implementation of these new values on the system and specifically the distribution of monetary values across scientific fields and universities. This could result in different subsidy-unit values.

d) Based on various studies that were commissioned by the Academy of Science of South Africa in 2009 and 2010 (ASSAf 2009), certain recommendations were made about the weighting of monographs and the process of assessing book and chapter subsidies. As far as the former is concerned, a recommendation was made that the current weight of five units for a monograph be increased to at least eight units. As far as the latter is concerned, these studies also recommended that a quality criterion be introduced in the assessment of monographs and chapters in books. The recommendation was – in the interests of quality, efficiency and more transparency – that *the DHET compile a list of "accredited" publishers*. International publishing houses such as Springer, Oxford, Blackwell, Sage and many more are internationally

[17] The Committee suggests that journals with a two-year Journal Impact Factor (JIF) of 1.00 or higher be defined as 'high-impact' journals. Although citation behaviour differs across fields, an impact factor of 1.00 or higher indicates that the journal generates at least as many citations as the number of papers it publishes.

[18] This category would include all South African journals that are not indexed in the Web of Science, SciELO or Scopus and hence would not have an impact factor value. Once a South African journal was accepted for any of these indexes, it would start recording an impact factor and could then be assigned to either Categories 1 or 2.

recognised for excellence in editorial and publishing practices. The greater challenge is to decide whether local publishing houses and university presses are on an equal footing with international publishers such as these. Again, however, it should not be too difficult to develop a classification or ranking of publishers according to which the subsidy for books and monographs can be allocated. Such a system would combine the imperative of excellence with the demands of efficiency and transparency (the current system of assessing book subsidies being neither efficient nor transparent).

e) The current funding framework does not intentionally encourage any form of *collaboration* (be it national or international collaboration). Collaboration (as measured in terms of co-authorship) is field specific, but international collaborative papers (or collaborations between universities and science councils) need to be incentivised, as such papers typically generate high citations, which increases the overall visibility of South African science. A similar argument could be made regarding the desirability of incentivising national collaboration (among universities, and between universities and the science councils) and regional collaboration (with other African universities). Again, the Committee proposes that *a study be commissioned to look into the mechanisms of introducing a more fine-grained reward factor for collaborative papers,* taking into account differences in the publication behaviours across different fields and disciplines. An option that was proposed is to *divide the research output unit in total among the South African authors*.

The existing funding framework has impacted very positively on the university sector as a whole and has had very positive effects on the research production of HDIs as well as of the universities of technology. The current framework allows for further targeted interventions, to assist some universities to develop their research capabilities further. However, there is evidence that these research development grants are not used optimally. The Committee believes that a much more fine-grained and targeted approach is required, to enable those universities and universities of technology that have limited research capacities to develop a critical mass of niche areas. This would require that *a proper analysis of the strengths of these institutions be undertaken, complemented by the development of research development strategies and plans that are properly managed and monitored*. The DST and DHET investments must be better aligned.

k) With the exception of the research development grants that are currently ring-fenced, the existing funding framework does not provide any specific incentive or reward to emerging scholars. Given the imperative in this country to broaden the human capital base for scientific knowledge production, the Committee believes that it is essential that the *goal of building research capacity for our system be re-affirmed*. There are various measures that could be considered in order to incentivise research production and publication for emerging scholars. One option is to consider the establishment of a *student journal* (or two journals: one for the humanities and the other for natural sciences) where postgraduate students could publish for the first time. Such journals (perhaps best administered by ASSAf) could be accredited journals and would enable students and young lecturers to 'break into the publishing system'. Another option is to provide additional rewards to publications by young and emerging scholars in international journals (e.g. the first publication by a young scholar in the Thomson Reuters Web of Knowledge and/or Scopus could earn 1.5 subsidy units). The Committee therefore recommends that a study be commissioned to investigate the various means whereby the research production and publication of emerging scholars in all fields could be incentivised.

l) Research outputs from the *performing, creative and visual arts must be funded*. The review of these outputs should be done by an internal panel at each university and, once approved, should be submitted to a DHET panel. The DHET must include a number of international representatives to benchmark outputs and to provide quality assurance.

m) Incentives to generate patents must also be put in place.

n) Partnerships with science councils must be systematised.

o) Investment in equipment and infrastructure must be ramped up and maintained.

iii Improving the production of doctoral graduates

a) The Committee recommends that financial support in the form of bursaries and grants be strengthened to enable more doctoral students to study full-time.

b) The Committee also recommends that *research be done on alternatives* to the current models of doctoral programme offerings, such as the establishment of doctoral schools at universities. Research development funding could be used to support the establishment of doctoral schools if the research found that these schools would be a better alternative.

viii. Conclusion

The existing research funding framework has had substantial impact on knowledge production at South African universities since it came into effect in the 2004/05 financial year. Its focus, in line with the NPHE of 2001 (MoE 2001), has been to stimulate and increase the volume of research output in the sector. In this goal it has succeeded. The framework embodies the 'golden' principle of rewarding research performance. The Committee believes that this principle is the most appropriate where knowledge production is concerned and is internationally recognised as such. Any changes to the existing framework must take this principle as their baseline and consider ways to improve on it (rather than rejecting or superseding it).

Thus far, 'research performance' has been conceptualised predominantly in quantitative terms. The opportunity to revise the framework allows us to introduce more qualitative concerns. It also allows us to think in a more differentiated manner. The recommendations listed above are based on these 'principles'. Firstly, the Committee does not believe that the pursuit of excellence and quality in scholarship is at odds with the concurrent pursuit of building and expanding research capacity. It simply means that one designs different 'instruments' to incentivise and reward these pursuits in a fair and transparent manner. Secondly, the Committee does not believe that the current framework 'discriminates' in any systematic manner against any category of university with regard to rewarding knowledge production. As the Committee has shown, the biggest gains in research output under the

existing funding framework have come from the historically ’disadvantaged’ universities and the universities of technology.

The Committee has also argued and shown that the big differences among the universities in our system are the result of various factors that embody institutional histories, institutional missions, political ideologies and institutional strengths and capabilities. South Africa will continue to have a highly differentiated knowledge-producing sector – as in most countries – because of these factors (and not because of the effects of the funding framework). What we should aim to achieve is to have a more refined funding framework that is equally attuned to the demands of quantity and quality and the imperatives of excellence and capacity building. The recommendations listed here are aimed at achieving just that.

9. University development and efficiency improvements

9.1 Foundation programmes

i. Description and purpose of the grant

The DHET has revised the policy of foundation provision. The full details of the policy are available in the document *Foundation Provision in Ministerially Approved Programmes,* dated 15 May 2012 (DHET 2012c).

Foundation grants, which are earmarked grants, were introduced for the first time in 2004 to allow universities to bid for earmarked funding for foundation provision offered in addition to regular provision. The primary purpose of foundation provision is to improve the academic performance of students who are at risk due to their educational background. The funding provided recognises the role of foundation provision as a strategy for improving success and graduation rates, particularly among students from disadvantaged educational backgrounds. The term 'foundation' programme is often used to refer to learning activities, at the lower end of the higher education band, that are intended to enable students from disadvantaged educational backgrounds to acquire the academic foundations necessary for succeeding in higher education. Foundation provision is located in a degree or diploma programme that is referred to as an 'extended curriculum programme'. The foundation provision component of the extended curriculum programmes focuses particularly on basic concepts, content and learning approaches that foster advanced learning (DHET 2012c).

ii. Importance of, and growth in, foundation provision

The DHET (2012c) notes that the importance of, and growth in, foundation provision are reflected in the following statistics on foundation provision:

a) The initiative to target 10% of first-time entering students in 2004 has already increased to the current average of 14% of planned first-time entering students at contact universities.

b) Actual enrolled foundation student headcounts in the university sector grew on average by 14% per year from 2007–11.

c) In 2009, the 203 state-funded programmes for foundation students were increased by another 45 programmes, representing an increase of 22% in programmes.

d) The actual first-time entering enrolment in foundation programmes as a percentage of the funded first-time entering enrolment in foundation programmes increased from 67%–93%, indicating that universities are achieving their goals in this regard.

iii. Funding mechanism of the grant, and recent changes to the funding policy

Although these programmes require an additional year of study, the credits of the foundation provision have to be absorbed within the approved formal time of the programme. A three-year programme that is extended to a four-year programme to accommodate foundation provision still receives a formal time of three years, which means that *within the teaching input funding grid* the programme is not funded fully for the additional load of additional foundation/augmented courses. The foundation provision is however supplemented with earmarked foundation grants.

FTEs generated by the additional foundation/augmented courses are weighted according to a different grid than mainstream enrolments, for the purposes of allocating an additional earmarked foundation grant, as shown in Table 82 (below).

Table 76 (below) shows the improvements made in the actual first-time entering enrolment in foundation programmes, as a percentage of the funded first-time entering enrolment in foundation programmes. The actual as a percentage of the funded first-time entering enrolments in foundation programmes increased from 67% in 2007 to 89% in 2010.

As noted above, the weighted FTE foundation students are annually funded in two ways:

i. By generating teaching input subsidy within the teaching input sub-block grant.

ii. Through earmarked foundation grants calculated on the basis of the weighted FTE foundation students.

The Rand values per weighted FTE foundation student over the past few years are shown in Table 77 (below).

Table 76: Enrolled foundation headcount (2007–11)

University	*Funded* first-time entering enrolment in foundation programmes					*Actual* first-time entering enrolment in foundation programmes				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
CPUT	818	858	858	885	885	492	621	759	816	777
UCT	425	435	445	680	708	479	496	521	484	613
CUT	245	260	260	267	277	293	271	275	215	187
DUT	436	439	439	328	328	145	298	306	258	216
UFH	690	715	740	590	590	315	333	267	399	561
UFS	1 050	1 155	1 275	1 085	1 205	635	632	954	1 333	1 429
UJ	1 755	1 805	1 805	1 706	1 652	991	1 504	1 667	1 263	2 044
UKZN	850	840	820	710	710	610	665	627	829	748
UL	540	540	540	570	570	449	415	323	580	603
MUT	360	360	360	335	330	298	339	374	347	306
NMMU	1 090	1 090	1 090	750	825	558	959	974	364	409
NWU	750	750	750	800	820	315	288	232	529	535
UP		955	1 115	850	867		422	433	793	948
RU	200	200	200	160	160	142	144	132	128	116
SU	78	213	253	393	393	194	215	190	383	346
TUT	485	1 770	1 905	1 835	1 835	434	1 681	1 790	1 661	1 269
VUT	560	560	560	320	320	84	176	216	320	331
Univen	430	480	580	300	300	465	154	230	230	280
WSU	810	1 075	1 105	984	984	622	764	785	880	862
UWC	537	562	587	1 120	1 217	609	741	816	1 112	1 075
Wits	225	225	225	120	120	197	117	121	104	57
UZ	270	340	390	260	260	102	113	203	315	243
Total	**12 604**	**15 627**	**16 302**	**15 048**	**15 356**	**8 429**	**11 348**	**12 195**	**13 343**	**13 955**
% of funded total						67%	73%	75%	89%	93%
UNISA*			5 328	815	912			151	186	404

Source: DHET (2012e)

Note:* The 2009 value of 5 328 represents students in separate courses.

Table 77: Rand value per weighted FTE foundation student

Year	Normal block grant Rand value per FTE	Earmarked grant Rand value per weighted FTE foundation student
2007/08	7 729	7 900
2008/09	8 560	8 100
2009/10	9 040	8 200
2010/11	9 956	9 000
2011/12	10 619	9 800
2012/13	10 877	10 500

Source: DHET (2012c)

The rationale for the additional funding of foundation students, which is currently in the form of an earmarked grant, is that the extended nature of the curriculum of these students requires more effort from universities to maintain, combined with the lowering of the credit values of the regular courses in the extended curriculum programme.

The foundation programmes have historically been funded on planned enrolments and estimated weighted FTE foundation students on a three-year basis. This however led to more funds being allocated to various universities than actual enrolments and, in certain instances, it also led to savings, especially in the early years of implementation (see Table 76, above).

The new policy directive (DHET 2012c) indicates that the Department is moving away from a fixed triennium period and universities have to submit all of their extended curriculum programmes for re-evaluation and approval. Programmes approved in 2012, however, will remain approved and funded in future years until notification of termination of such programmes is provided. Universities are also allowed to annually submit proposals for new extended curriculum programmes to be approved for state funding. As a result of the funding mechanism until now being based on planned enrolments, the shares of actual enrolments are currently distorted, with the majority of universities over-funded and some under-funded (as a result of more-than-planned enrolments). From 2013/14 a funding migration strategy will be implemented to align the current distorted funding allocation shares, after which the planned total of weighted FTE enrolled foundation students will become part of the student enrolment planning exercise of the Department, and will then form the basis for the distribution of the earmarked funds for foundation provision. The DHET policy (2012c) states that the total size of earmarked funds will be determined by the total planned foundation enrolment targets for the sector set within the enrolment planning exercise, with annual inflation-related increases.

iv. Funding implications of the full funding of foundation provision

a) <u>Current funding situation</u>

Foundation provision funds are provided in two areas: the teaching input sub-block grant, and as earmarked funds. Within the teaching input sub-block grant, the Rand value per FTE

student within the sector for 2012/13 is reflected in Table 78. This involves all students in the university sector, of which foundation students are only a small portion.

Table 78: Teaching input sub-block grant funding of all students in the sector (2012/13)

	Rand per teaching input unit
Contact tuition	
Funding group 1	R10 877
Funding group 2	R16 316
Funding group 3	R27 193
Funding group 4	R38 071
Distance tuition	
Funding group 1	R5 439
Funding group 2	R8 158
Funding group 3	R13 597
Funding group 4	R19 035
Weighted average	**R16 642**

Notes:
Funding group 1: 07 education, 12 law, 18 psychology, 19 public administration & services
Funding group 2: 04 business, economics & management studies, 05 communication & journalism, 06 computer & information sciences, 11 languages, linguistics & literature, 17 philosophy, religion and theology, 20 social sciences
Funding group 3: 02 architecture & the built environment, 08 engineering, 10 family ecology & consumer sciences, 15 mathematics & statistics
Funding group 4: 01 agriculture & agricultural operations, 03 visual & performing arts, 09 health professions & related clinical sciences, 13 life sciences, 14 physical sciences, 16 military sciences

This data is based on funded enrolled students according to the enrolment planning exercise. It also involves funding students of year n-2 funded in year n, that is, 2010-enrolled students funded in 2012/13. The over-enrolment of students in the sector in the 2010 academic year was 8.2%, and is excluded in this exercise.

Universities were requested to report foundation students in HEMIS from 2010 onwards, which makes possible more detailed funding analyses for the 2012/13 financial year. The 2011 HEMIS FTE foundation student data (excluding Walter Sisulu University data, due to data problems) was used as a proxy to determine the relative shares of foundation students in the various funding groups reflected in Table 79 (below).

Table 79 shows that for the 2012/13 financial year, the 2010 foundation students in the sector were funded at an average rate of R23 462 per weighted FTE foundation student within the teaching input sub-block grant.

For earmarked foundation grants, the total state amount for the sector for the 2012/13 financial year was R194 033 million. In order to ensure comparability, the 2010 actual weighted FTE foundation student data was used. The target was 17 035 weighted FTE

Table 79: Teaching input sub-block grant funding of foundation students in the sector (2012/13)

	Rand per foundation teaching input unit	Shares of FTE enrolled foundation students (%)
Contact tuition		
Funding group 1	R10 877	8.8
Funding group 2	R16 316	43.1
Funding group 3	R27 193	23.5
Funding group 4	R38 071	23.5
Distance tuition		
Funding group 1	R5 439	0.0
Funding group 2	R8 158	0.3
Funding group 3	R13 597	0.4
Funding group 4	R19 035	0.3
Weighted average	**R23 462**	**100.0**

foundation students for 2010, of which only an estimated 79% was achieved, namely 13 458 weighted FTE foundation students. (Walter Sisulu University substantially reduced its FTE foundation student numbers in the most recent progress report.) The weights to weigh foundation students are based on the funding grid for earmarked funds (as set out in Table 82, below), and differ from the weights in Table 81 (below) used within the teaching input sub-block grant. Therefore, within the earmarked category, foundation students were funded at an average rate of R194 033/13 458 weighted FTE foundation students: R14 418 per weighted FTE foundation student.

Earmarked foundation grants are therefore funded within the funding groups shown in Table 80 (below).

Table 80: Earmarked funding of foundation students in the sector (2012/13)

Contact and distance tuition	Rand per foundation teaching input unit	Shares of FTE enrolled foundation students (%)
Funding group 1	R14 418	24.6
Funding group 2	R21 627	19.4
Funding group 3	R28 836	56.0
Weighted average	**R23 891**	**100.0**

The actual 2010 enrolled foundation students reflect an estimated 10.8% of planned first-time entering students in the sector. The university with the largest percentage of first-time entering students is the University of the Western Cape, with 34% of its first-time entering students on extended curriculum programmes.

b) Future funding of foundation provision

Within the current system of funding foundation provision, the reduced credits for extended curriculum programmes funded within the teaching input sub-block grant are funded at an average of R23 462 per weighted FTE foundation student, while within the earmarked category they are funded at an average of R23 891 per weighted FTE foundation student.

The earmarked foundation category will also be funded in the future by using for calculation purposes the actual number of students two years prior (n-2) to the year being funded (n). It should be noted that in the period 2004/05–2011/12, no discussions were held of what should be the relationship of the Rand values of foundation funding in the teaching input sub-block grant and in the earmarked grant category.

The aim of the foundation provision year is to formalise an extended curriculum in order to cater for the large percentage of students who would otherwise in all probability have dropped out of the system. Students droppping out result for the university in question in a loss of the income that the institution would have obtained within the teaching output sub-block grant when the student graduated. The foundation provision year ensures that the dropout rate decreases; the student remains longer in the university system. The university benefits in terms of the teaching output sub-block grant when more graduates are produced.

The percentage planned first-time entering students currently funded within foundation provision is about 11%, which could potentially grow over time to 33%, that is, a three-fold increase. Therefore, a total of R194 million x 3 = R582 million in the Rand of 2012/13 – or roughly R600 million in the Rand of 2012/13 – would be required **over time** for foundation provision. The additional funds that could be requested from Treasury total **R400 million in the Rand of 2012/13**. This projection does not take into account that current funding of foundation students focuses more on students in the natural sciences, whereas in future the focus would probably be more on the humanities and on business.

Should the policy of reducing credit values of an extended curriculum programme be changed – so that, for example, a four-year extended curriculum programme is funded not as three years but as four years within the teaching input sub-block grant – then all of the years of an extended curriculum would be fully funded in the same way within the teaching input sub-block grant. In such a scenario, the question then remains whether additional earmarked foundation state funding is really necessary at all.

One of the aims of foundation provision is to target students in the natural sciences, because this is the area in which students struggle in particular. In fact, Table 80 (above) reveals that more than 50% of students are in the natural sciences (funding group 3). However, the funding grids within the block grant and for earmarked foundation funds have certain shortcomings in this regard.

The funding grid and corresponding weights used in the teaching input sub-block grant are presented in Table 81. The funding grid and corresponding weights used in earmarked foundation grants are presented in Table 82 (below).

Table 81: Funding groups within the teaching input sub-block grant

Funding group	Weight	CESM categories included in funding group
1	1.0	07 education, 12 law, 18 psychology, 19 public administration & services
2	1.5	04 business, economics & management sciences, 05 communication & journalism, 06 computer & information sciences, 11 languages, linguistics & literature, 17 philosophy, religion & theology, 20 social sciences
3	2.5	02 architecture & the built environment, 08 engineering, 10 family ecology & consumer sciences, 15 mathematics & statistics
4	3.5	01 agriculture & agricultural operations, 03 visual & performing arts, 09 health professions & related clinical sciences, 13 life sciences, 14 physical sciences

Table 82: CESM categories and weights of FTE foundation students for earmarked funds

Funding group	Weights	CESM categories included in funding group
1. Humanities	1.0	03 visual & performing arts, 05 communication & journalism, 07 education, 11 languages, linguistics & literature, 12 law, 17 philosophy, religion & theology, 18 psychology, 19 public administration & services, 20 social sciences
2. Business	1.5	04 business, economic & management studies
3. Science and technology	2.0	01 agriculture & agricultural operations, 02 architecture & the built environment, 06 computer & information sciences, 08 engineering, 09 health professions & related clinical sciences, 10 family ecology & consumer sciences, 13 life sciences, 14 physical sciences, 15 mathematics & statistics

Taking into account the Rand values set out in Tables 79 and 80, and comparing the funding grids in Tables 81 and 82, we can see the following:

- CESMs 07, 12, 18 and 19 in funding group 1 receive R10 877 per weighted FTE student within the teaching input sub-block grant; whereas, within earmarked funds, they are funded at R14 418 per weighted FTE student. This implies that these CESMs receive 33% **more** earmarked funding than in the block grant.
- CESMs 01, 09, 13 and 14 in funding group 4 receive R38 071 per weighted FTE student within the teaching input sub-block grant; whereas, within earmarked funds, they are funded at R28 836 per weighted FTE student. This implies that these CESMs receive 25% **less** earmarked funding than in the block grant.

The above trends show that foundation students in the humanities are better resourced in the earmarked foundation funding than natural sciences students are. This should be corrected, and the Committee concluded that the best possible solution would be to increase the credits of the programmes to the full formal time of the qualifications and to weight them within the funding grid on the same basis as all the other programmes.

Tables 83 and 84 (below) depict a scenario developed by the Committee to illustrate what the impact would be if the extended programmes were funded for their full formal time within the approved teaching input units for 2011 according to the enrolment plan. The assumptions of the scenario are as follows:

a) The scenario is based on the approved published enrolment planning funded weighted units for 2011.

b) The scenario assumes that the current unweighted FTE foundation students cater for on average 0.75 of an academic year. The current funding of an extended curriculum programme of four years is only for three years, where the unweighted FTE foundation students are part of the three years to be funded. To fund a full year extra, the current unweighted FTE foundation students would have to be weighted 1+ (1/0.75) within the teaching input sub-block grant, which is equal to 2.3 times. A three-year qualification extended over four years would then roughly be funded for four years in the teaching input sub-block grant.

c) In this scenario there are no additional earmarked funds for the foundation provision. This scenario includes the current funds for teaching input sub-block grants plus the total for earmarked foundation funds, namely the total for (E). Additional funding required to increase the Rand value in the teaching input sub-block grant from R10 623.00 to its original value of R10 850.72 (i.e. by 2.1%) is R12.347 billion x 2.1 = R265 million. This amount does not take into account any increases in foundation students in future years in the sector, which is expected to be more in the human sciences.

The implications of the full funding of foundation programmes according to their formal time can be seen in Table 84 (below). If an amount of R265 million can be added to the teaching input grant, the Rand value of the teaching input grant will remain at the current level, and all universities will receive a higher teaching input grant than is currently the case.

Table 83: Implications of accommodating the foundation provision in the teaching input block grant for 2013/14

University	Current system for 2013/14: Scenario 1					
	Total teaching input units (TIUs) in sub-block grant 1) (A)	Earmarked foundation weighted units (B)	Funding for 2013/14			Average Rand value in teaching input sub-block grant (C/A)
			Teaching input sub-block grant (R'000) (C)	Earmarked foundation provision (R'000) (D)	Total (R'000) (E = C+D)	
CPUT	53 037	1 376	575 489	16 936	592 425	10 851
UCT	56 019	822	607 849	10 232	618 081	10 851
CUT	17 327	163	188 006	3 065	191 071	10 851
DUT	37 861	227	410 821	3 264	414 085	10 851
UFH	14 856	428	161 197	6 571	167 768	10 851
UFS	52 250	1 097	566 955	13 458	580 413	10 851
UJ	74 012	2 102	803 082	23 859	826 941	10 851
UKZN	81 266	891	881 797	10 356	892 152	10 851
UL	43 546	650	472 502	7 401	479 902	10 851
MUT	14 410	325	156 354	3 596	159 950	10 851
NMMU	40 398	409	438 343	9 244	447 587	10 851
NWU	64 641	634	701 396	9 889	711 285	10 851
UP	97 265	890	1 055 397	10 925	1 066 321	10 851
RU	13 967	60	151 549	1 458	153 007	10 851
UNISA	111 693	175	1 211 946	10 074	1 222 019	10 851
SU	58 501	375	634 777	4 526	639 303	10 851
TUT	83 098	1 706	901 671	22 735	924 406	10 851
VUT	29 070	306	315 427	3 482	318 909	10 851
Univen	18 578	328	201 584	4 035	205 619	10 851
WSU	38 465	283	417 371	11 049	428 420	10 851
UWC	35 385	939	383 954	14 158	398 112	10 851
Wits	63 562	56	689 695	1 184	690 879	10 851
UZ	19 829	194	215 154	3 210	218 363	10 851
Total	**1 119 033**	**14 434**	**12 142 314**	**204 705**	**12 347 019**	**10 851**

Source: DHET (2012e) and the 2013/14 subsidy calculations

Table 84: Implications of accommodating the foundation provision in the teaching input block grant for 2013/14

University	Proposed scenario for 2013/14: Scenario 2					Increase in fund allocation owing to Scenario 2 (R'000) (H-E)
	TIUs in teaching input sub-block grant			Pro-rata distribution of available state funds 3) (R'000) (H)	Average Rand value in teaching input sub-block grant 4) (H/G)	
	Enrolment planning total (A)	Additional foundation units 2) (F)	Total (G = A+F)			
CPUT	53 037	4 685	57 722	613 178	10 623	20 752.849
UCT	56 019	2 159	58 179	618 032	10 623	-48.976
CUT	17 327	580	17 907	190 222	10 623	-848.322
DUT	37 861	805	38 666	410 753	10 623	-3 331.467
UFH	14 856	1 379	16 234	172 458	10 623	4 690.222
UFS	52 250	2 911	55 162	585 983	10 623	5 569.859
UJ	74 012	6 177	80 188	851 841	10 623	24 899.941
UKZN	81 266	3 104	84 370	896 265	10 623	4 112.985
UL	43 546	2 192	45 738	485 875	10 623	5 972.961
MUT	14 410	828	15 238	161 868	10 623	1 917.756
NMMU	40 398	1 322	41 720	443 188	10 623	-4 398.566
NWU	64 641	1 678	66 318	704 497	10 623	-6 787.227
UP	97 265	2 923	100 188	1 064 294	10 623	-2 027.227
RU	13 967	170	14 137	150 179	10 623	-2 827.336
UNISA	111 693	519	112 212	1 192 024	10 623	-29 995.577
SU	58 501	1 213	59 714	634 341	10 623	-4 961.906
TUT	83 098	4 389	87 487	929 374	10 623	4 967.741
VUT	29 070	887	29 957	318 232	10 623	-677.581
Univen	18 578	1 054	19 632	208 550	10 623	2 930.945
WSU	38 465	598	39 063	414 963	10 623	-13 457.310
UWC	35 385	2 865	38 250	406 331	10 623	8 219.026
Wits	63 562	227	63 789	677 634	10 623	-13 244.701
UZ	19 829	593	20 421	216 935	10 623	-1 428.091
Total	**1 119 033**	**43 258**	**1 162 292**	**12 347 019**	**10 623**	**0.000**

Source: DHET (2012e) and the 2013/14 subsidy calculations

v. Inputs received from universities and other role-players in university education with regard to the foundation provision grant

The following main points were made and recommendations received through various presentations and submissions and in response to surveys.

i. *The need for foundation provision and the effectiveness of foundation provision*

(a) The need for foundation provision persists, since the majority of students entering higher education institutions are inadequately prepared for university study. Transformational goals will not be achieved if students are not competent when they finish their studies. There is a moral responsibility to create the basis for these students to transcend the past inequities brought forward from the schooling system.

(b) Foundation programmes continue to provide access to poor students who, in the main, attend poor schools in poor and (especially) rural areas and are less likely to perform well due to their disadvantaged contexts.

(c) There is a majority view that it is evident from institutional reports, formal and informal publications, and academic activities and networks focusing on foundation provision that this area of work is gaining maturity and experiencing increasing demand as a means of responsibly widening access and, equally importantly, improving success and graduation rates among students from disadvantaged educational backgrounds. Both these goals are central to improving equity and efficiency in the higher education sector. It is also argued that the effectiveness of foundation programmes in improving success and throughput rates needs to be empirically researched and monitored.

ii. *Improvements needed to ensure higher levels of effectiveness of foundation provision*

(a) The implementation of foundation provision within extended curriculum programmes has been very uneven across the universities and in some cases across faculties or schools in the same university. The unevenness has been in key areas such as the following:

- The extent to which foundation provision articulates effectively with the relevant mainstream curriculum (an essential condition for fostering student success through to graduation);
- The profile of the student intake;
- The qualifications and service conditions of the staff appointed to teach foundation courses and manage extended curriculum programmes (in many cases the teaching staff are junior or under-qualified, inexperienced and on very short-term contracts, all of which inhibits the development of expertise and professionalism in a challenging educational area); and
- The extent to which foundation courses are properly accommodated in the institutional administrative and quality assurance system.

(b) It is of the utmost importance that the foundation provision articulate with the mainstream programmes and pedagogy.

(c) It is almost impossible to manage enrolment in foundation programmes to match the precise numbers planned. It would be better to specify a target range of enrolments, which would then allow for some flexibility, and programmes that are under-enrolled could be compensated for by some over-enrolment in others.

(d) Foundation programmes need to be extended to a much larger percentage of the student population, incorporating more of the students placed in mainstream programmes.

(e) Stigmatisation of students enrolled in programmes with foundation provision persists and needs to be resolved. This suggests that labelling a student as a foundation student and treating him/her differently makes him/her reluctant to engage in the additional activities required of foundation students.

(f) The biggest problem for universities in terms of filling the envisaged number of places in extended programmes has been in programmes where a certain level of performance in Grade 12 is expected in physical science and/or mathematics. This is due to the continuing lower enrolments and low pass rates in the NSC examinations in physical science and mathematics.

(g) Some universities hold the view that, while the extended programmes should continue to be funded, the reintroduction of the funding for a traditional one-year foundation programme to grow the pool of students for entry into maths- and science-based programmes would be a critical intervention to increase enrolments and success rates.

(h) It is also suggested that extended programme students need ongoing support and development, especially in their third year of study when they transfer to the mainstream programme. Some funding for academic support in the third and fourth

years of the programme is needed. This would emphasise a shift from ‘access for redress’ to ‘access for success’.

(i) Universities should be allowed to move mainstream students who perform poorly in the first semester of their first year of study into extended programmes. Universities that do not meet their foundation student targets should be allowed to enrol students that meet the institution’s normal admission criteria for mainstream programmes, in foundation provision programmes, if such students are considered to be under-prepared.

(j) The funding allocated to universities for foundation provision should be based on the percentage of first-time entering students admitted that originate from schools categorised by the Department of Basic Education as being under-resourced (Quintiles 1 and 2).

iii. *Recommendations regarding the funding model for foundation provision*

(a) Foundation provision funding needs to continue as an earmarked grant until extended curriculum programmes, incorporating appropriate forms of foundation provision, are effectively embedded in all the universities, with adequately qualified staff and full inclusion in the academic management, administration and quality assurance systems of institutions. Continuing with earmarked funding will ensure not only the scrutiny of programme designs and proposals by an expert reference group but also adherence to the definitions on which management of the foundation grant is based, as well as annual reporting on performance. These measures are necessary not only to protect the students’ interests but also to ensure responsible use of state funding. A few submissions, however, argued for the incorporation of foundation provision into the mainstream funding, since the creation of a separate funding stream simply leads to bureaucratic complexity. If the funding of foundation provision is done within the block grant, an additional weight should be attached to the foundation provision component due to the higher cost involved.

(b) The current system of funding in three-year cycles should be replaced by a rolling funding system in which, once formally approved by the Minister, extended curriculum programmes continue to be funded until they are withdrawn or substantially changed by the institution. The system should also allow for new extended curriculum programmes to be proposed for approval annually. Rolling funding is essential to enable institutions to appoint qualified staff on a permanent basis, which is in turn essential for continuity, for professional career tracks, and for building the specialised educational expertise that foundation provision calls for.

(c) The total amount of funding made available for foundation provision annually should be increased substantially, to meet increasing demand. The total currently available allows for only some 15% of the first-time entering student intake to be offered foundation support, whereas analysis of performance patterns indicates that foundation provision is needed by at least three times that proportion of the intake. Increasing the funding quantum would greatly strengthen the sector's capacity to meet the central goal of foundation provision that has been in place for a decade – that is, to ensure that all educationally disadvantaged entrants are provided with sufficient foundation support to enable them to graduate. This means that the beneficiaries of foundation provision must include students who are formally eligible for mainstream entry but are inadequately prepared to succeed without foundation support. This key aspect of policy has hitherto not been adequately achieved, and it is not possible for the goals of improving both access and success to be met without a substantial increase in the availability of foundation funding.

(d) Funding must be made in more or less the same way as for mainstream programmes. It is thus proposed that the extended programmes be given a formal time equivalent to the full formal time of the programme for subsidy purposes, and that the same funding weights be applied as for the mainstream programmes. It is estimated that foundation programmes are currently funded at a level of about 30% less than they should be.

iv. Collaboration with further education and training/technical and vocational education and training colleges

(a) The possibility of collaboration between universities, on the one hand, and the FET/TVET colleges in the provinces, on the other, needs to be considered. In terms of such collaboration, selected students would spend a year or two at the college and, if successful, gain access to the second year of study in the relevant programme offered by the university. Institutions involved in such partnerships would have to agree on the terms and conditions of this arrangement, including articulation. Such partnerships would have funding implications for both institutions.

vi. Recommendations

Some of the changes proposed by universities and other role-players have already been implemented in the revised policy of the DHET dated 15 May 2012 (DHET 2012c). The Committee makes the following recommendations on the basis of the various inputs received:

a) Foundation provision should not continue indefinitely. The root of the problem lies in the poor quality of the basic education system and this needs to be addressed by government. It is however expected that the need for foundation provision will continue for the foreseeable future; and foundation provision must continue since it promotes equity in the system.

b) Foundation provision funding should continue in the form of an earmarked grant.

c) The funding allocated to foundation provision would have to increase considerably to support a larger portion of under-prepared students entering the system. The extent to which foundation provision can be expanded to more under-prepared students should be managed within the enrolment planning process.

d) The formal time of extended programmes should be increased, to give full credits to these programmes. There are three good reasons for implementing this recommendation. Firstly, it would simplify the allocation of credit values for a programme. Secondly, it would align foundation programmes for a possible move towards formal four-year and five-year qualifications, should the Minister in future approve such a change. Thirdly, it would generate the necessary additional funds within the teaching input sub-block grant for extended curriculum programmes, which are currently only funded for three or four years instead of four or five. The additional foundation grant should remain to support these programmes, not only because these programmes are more expensive than the mainstream programmes but also because the additional foundation grant enables the DHET to steer the implementation of, and special support for, foundation provision. Furthermore, it might result in slower overall growth in numbers of first-time entering students for university education if resources are not increased to provide the additional funding that would be needed.

e) Once the findings and recommendations of the current investigation by the CHE into a four-year initial degree/diploma and a five-year degree for professional degrees are available, and depending on the Minister's decision in this regard, the continued foundation provision in its current form will have to be re-evaluated.

f) Foundation provision should be embedded in the enrolment process and should be strengthened at all universities.

g) The Committee supports the recent policy change that universities be migrated, through the enrolment planning process, to their actual enrolments for foundation programmes, in the same manner as for mainstream enrolments.

h) The DHET should continually monitor and report on the impact of foundation provision with regard to the success and throughput rates of foundation students compared to mainstream students, to ensure that empirical evidence is available for continued support of foundation provision.

i) As proposed in the new policy (DHET 2012c), the Committee supports abolishing the three-year rolling funding cycle, in favour of continued funding for the duration of the approved foundation programmes, and enrolment targets established through the normal enrolment planning process.

j) A one-year stand-alone foundation programme should be introduced for students that need thorough mathematical and science knowledge for entering into science, engineering and technology fields. Such an approach would allow for the introduction of entry-level programmes that are generic to broader fields, in order to prepare students in basic skills and knowledge and to encourage further study in specialised career fields.

9.2 University development grant

Proposal

Due to the fact that there are areas of overlap between teaching development, research development and the development of the new generation of academics, the Committee proposes that an umbrella earmarked **university development grant** be allocated that includes funding for a) teaching development, b) research development and c) the development of the new generation of academics. An area of overlap is, for example, the improvement of the qualifications of academic staff. The idea is that the allocation of the funds flowing from the three components would be calculated and determined separately; but based on specific institutional needs, universities could develop an integrated plan to address these three issues, and should be allowed to propose a different division of the pool of money generated by these three components – on condition that attention is given to all three components. Clear performance targets would have to be set for all three components and the funding could only be accessed on a project basis.

Another rationale for this combined development fund with three components is that in certain universities the need for the improvement of staff qualifications, which is a prerequisite for the improvement of all three components, might have to be prioritised to give effect to any improvement of the three areas that need to be addressed. It is also envisaged that a single, integrated development plan addressing all three aspects would be developed and that a single, integrated report would be delivered by the university on the achievements of the goals set in the project proposals. Until the plan of the DHET with regard to the development of the next generation of academics has been completed, the initial funding of this component would probably require a slice from the teaching development and research development funds. The three components of the university development grant are discussed below.

9.2.1 Teaching development

i. Introduction

Graduate output is not meeting national needs in terms of development or equity. If there is to be improvement in graduate outcomes of the order required to meet national needs, the higher education sector has to identify and address key improvement factors that are within its control. Improving the effectiveness of the educational process – from curriculum and course design to classroom delivery and student support – is one of the main factors over which the sector has full control, and should therefore be one of its central challenges (DoE 2008a). While various forms of academic development have been valuable in widening access and success, and while the development of foundation provision and extended programmes across the sector has supported these goals, the major educational challenge that remains for the sector is to identify and implement educational strategies that will successfully accommodate student diversity in mainstream provision. This represents in turn a central challenge and focus for *teaching development* across the sector.

To take account of the realities of the South African situation, fresh educational approaches are called for in mainstream provision. The *teaching development grant* is aimed at *raising and fostering the level of educational expertise* available in the sector. It must also be recognised that access to educational expertise and resources in South Africa is highly uneven across universities, because of historical inequalities, and to some extent across disciplines, because of different traditions of educational involvement (DoE 2008a).

As has been recognised in a range of countries, especially developed countries, meeting this challenge requires leadership and effective organisational structures, at national, institutional and sometimes regional levels. National leadership is critical for gathering and disseminating the body of knowledge underpinning teaching development, for informing and promoting relevant policy development, and for supporting professional leadership in the universities (DoE 2008a). A number of developed countries have, over the past 10–15 years, established or significantly extended national structures for the advancement of university teaching. In South Africa, by contrast, despite our much greater need, structures for supporting teaching development are very limited in numbers and capacity. The HEQC, through its Directorate of Quality Promotion and Capacity Development, is the only statutory body with an explicit mandate to improve teaching and learning in higher education (DoE 2008a). Investing in sound leadership and co-ordination structures, at national and institutional levels, is a necessary condition for making optimal use of teaching development grants to the universities. In the South African context, developing capacity in this way is essential for addressing the shortage and skewed distribution of educational expertise across the sector, and thus for enabling the sector to progress towards meeting national developmental needs (DoE 2008a).

ii. Experience of the first phase of implementing the teaching development grant

The experience of implementing the teaching development grant in the first phase has shown that the mechanism for allocating and distributing the teaching development grant was not sufficiently directive. Such funding has not shown adequate gains in teaching outputs in sectors and universities where improvements are most needed. In 2010/11 UNISA received 66.4% of the teaching development grant, due to that institution's low graduation rates.

The teaching development grant was previously part of the block grant and universities were able to utilise their funds at their own discretion. Funds were not necessarily directed at teaching development initiatives. However, the fact that the teaching development grant was part of the block grant limited the ability – on the part of the institutions and the DHET alike – to monitor the effectiveness of the utilisation of funds within the institution. Due to the ineffectiveness of the teaching development grant it became necessary to make it an

earmarked fund, based on plans that are assessed, with continued funding being contingent on demonstrable progress. There is an overall sense that the method used to calculate the teaching development grant allows for a perverse incentive: of increasing the teaching development grant as the graduation rate of an institution deteriorates.

Problems that have been identified with the first round of implementation of the teaching development grants are as follows:

1. The difference in the marginal benefit from one more teaching output resulting in higher subsidy income compared to the marginal benefit in the development grant from one less graduate appears to be not enough to encourage universities to expend effort on improved teaching and learning initiatives.
2. The method of calculating teaching development grants based on the shortfall between the normative and actual graduate outputs causes the size of the development funds to vary significantly within the institution from year to year. This makes it impossible to plan on a long-term basis. Teaching development grants need to be earmarked over longer periods to make an impact.
3. The development funds per institution do not necessarily increase with inflationary adjustments, but rather tend to decline from year to year as graduations improve.
4. The indicator for the first round of implementation for the teaching development grants was graduate outputs, and improvements can only be expected in three to five years, which is too long a period to review an institution's teaching development performance.
5. A number of universities that receive teaching development funding had little access to high-level skills to assist in developing their teaching capacity. The teaching development grants in such cases were often inappropriately allocated, which did not lever measurable improvements in student performance.

The Task Team on Higher Education Teaching Development Grants, appointed by the former Minister of Education in 2008, made the following recommendations (DoE 2008a):

1. All universities should qualify for teaching development funds because improvements are needed at all universities. Universities should strive to retain their eligibility by improving their performance. The purpose of investment in improved teaching and learning should focus not only on increasing the number of graduates but also on the quality of graduates.
2. The categories for the utilisation of teaching development grants should be broad enough to allow universities to target funds within the context of local support needs.

3. Important categories of expenditure for teaching development funds are:
   - Investments in human resources;
   - Core infrastructure; and
   - Curriculum development and teaching support initiatives.
4. Universities that currently have lower success rates need higher levels of funding to improve their performance; but there should be a lower limit of performance, below which the teaching development grant is not increased.
5. The distance education mode requires more focused investment and support in the following key areas:
   - Materials development;
   - Student support at a distance in the learning process; and
   - Curriculum guidance and planning to ensure that students carry an appropriate load.
6. In the case of distance education offerings, the largest proportion of registrations is in a relatively small number of courses, and it is thus desirable that focused attention to learning and teaching be given to these courses.
7. The teaching development grant should be separated into the allocations for distance education programmes and for contact programmes. This should be based on headcount enrolments, which should allow distance education programmes to receive a larger share of the teaching development grant funding. This would compensate for the more intensive use of resources for supporting distance education teaching compared to contact teaching.
8. Upon approval of the development plan of an institution, the stated level of teaching development grant funding should be assured for a period of five years. Continued teaching development grant funding should depend on an annual assessment of the performance of a university.
9. The measurable performance indicator should be the success rate, which is the percentage passed credits.
10. The format of the progress reports and administrative procedures should be kept as simple as possible so as to minimise costs both for the DHET and for the individual universities.

iii. Inputs received from role-players

i. Graduation rates used as norms for allocating development funds

a) The graduation rate, due to its problematic definition, should no longer be used as a measure of achievement of teaching output performance targets. The problem with the graduation rate is that it is highly influenced by the enrolment growth in the sector, as well as the particular growth rates in a university. If the growth rate is high, the graduation rate appears lower than it is, and if the growth rate is low, the graduation rate appears higher due to the fact that the enrolments are the denominator in the calculation. The graduation rate of a university in totality could be very misleading since the PQMs of universities differ, with different formal times for qualifications. If a university has a large number of qualifications where students can graduate in a short period (for example, advanced certificates in education) the graduation rate will be higher than at a university with more qualifications with a longer duration (for example, four-year professional degrees). In such a case, the graduation rates of the two universities may be very different although the institutions might be at the same level of performance. If the mix of full-time, part-time and distance education programme offerings is also brought into the picture, the graduation rate as a measure of performance becomes even more misleading.

b) Universities proposed that graduation rates as a measure of teaching outputs be replaced by the following:

- Undergraduate course success rate (i.e. credits divided by enrolment measured in FTEs expressed as a percentage); and
- Throughput rates of the entering cohort for each qualification after n+2 years where n is minimal formal time.

c) Students in professional degrees often take longer to graduate due to the high credit values required by professional bodies, and this may have an impact on graduation rates. A graduation rate of 19% for contact qualifications and 12% for distance qualifications in undergraduate qualifications of four years or more may be more appropriate.

d) The postgraduate up to honours graduation rate is significantly higher than the current norm, and the current expected graduation rate for the postgraduate qualifications up to honours seems to be low. A rate of 25% for contact qualifications and 15% for

distance qualifications seems more appropriate – it seems anomalous that three-year B degrees can have a graduation rate of 22.5%, but that a one-year formal time honours degree should have a graduation rate of 18%.

e) Some differentiation in norms consonant with institutional differentiation may be useful in recognition of the diverse student demographic composition across universities, given the proportion of students from poor and disadvantaged backgrounds. For example, cohort analyses suggests that students from poor schools generally enter the university with lower school-leaving points, are more at risk of dropping out, and take longer to complete.

ii. The 2012/13 formula for allocation based on success rates

a) The new criteria used for the 2012/13 grant allocation, in which the allocation of funding is linked to the success rate of a university, is supported by role-players. It should, however, be tightly linked to performance targets, and continued funding should be linked to satisfactory reporting on performance against plans. The allocation of a teaching development grant to all universities, regardless of outputs, is welcomed, although it recognises that the allocation will need to be made along a sliding scale such as that included in the 2012/13 allocation methodology.

iii. Criteria for the allocation and uses of the teaching development funds

The current criteria for the allocation of teaching development grants focus to a large extent on staff development. The impact of the allocation of the teaching development grant could be more effective if the following were also provided for:

a) Improvement of infrastructure and the purchase of equipment to enhance teaching and learning practices are needed, since trained staff needs updated or new equipment. Quality could be enhanced through the implementation of technology-mediated education in its various forms, complemented by staff capacity development.

b) Curriculum development is needed, since teaching, learning and assessment practices are unlikely to change if curriculum development is not seen as being integral to quality enhancement. These curriculum development activities could include tutorials,

mentorship programmes, recognition of prior learning (RPL), portfolio development and other, related initiatives.

c) Student academic support and development are needed as they are critical to student success. This includes the establishment of student writing centres where students from various faculties and disciplines can be taught both the generic and the discipline-specific styles and conventions of academic writing.

d) There should be the implementation of a first-year student experience project, which involves the training of selected senior students to act as tutors, mentors and advisors to first-year students. In addition, professional development short courses and workshops should be offered to staff teaching first-year students.

e) Teaching and learning should be professionalised by enabling incoming and existing academics to develop the necessary competencies through capacity development programmes, in order to allow academics to provide students with a quality learning experience.

f) The teaching development grant could also be used to grow the new generation of academics by, for example, appointing tutors on a fixed-term contract and including the development of teaching practices and methods as well as research capacity development in their contracts.

iv <u>Incorporation of teaching development funds into the block grant, or discontinuation of the teaching development grant</u>

a) Role-players suggested that the current framework has 'gone overboard' in terms of the focus on improving teaching. Rather, improving the learning experience should be the focus, and this would entail introducing a variety of pedagogies and forms of support. If universities could agree on performance targets with the DHET they could decide on their own strategies and plans of action to achieve those targets and *then teaching development funding could be included in the block grant*.

b) Several universities have however indicated that the teaching development funds should be scrapped and the funds added to the actual teaching output component of the block grant. This would also improve the weight of the teaching output grant relative to the teaching input grant. The development grants reward weaker and weaker performance of universities with bigger and bigger shares of the available teaching development funds. Universities that successfully enrol and graduate

students from poor, disadvantaged and rural schools should benefit and be assisted through the block grant subsidy, thereby directly impacting higher education transformation.

c) Although it has been very useful in ensuring that teaching development has been targeted, the allocation has become too large in recent years. The allocations could be more modest and the rest of the funds should be returned to block grant funding. This would allow a more focused and efficient use of teaching development funds, while releasing some of the funds for more discretionary allocation by the universities.

v. Fixed allocations over longer periods

a) It would be helpful if the allocations could be made on a three-year basis rather than an annual basis. This would ensure better planning and longer rollout of projects, which in any case take more than a year to implement.

vi. Increased monitoring of the utilisation of the funds

a) Universities that would qualify for developmental assistance should provide proposals for the teaching development grant and then be measured against those proposal objectives. Currently, the grant is given and then universities find ways of spending it, which is not always on development of teaching and learning.

vii. All universities should receive teaching development funds

a) As the intake of under-prepared students into universities has increased, all universities should be paying greater attention to improving academic student support. This applies to contact and distance education modes of teaching alike. Consideration should therefore be given to distributing teaching development grants among all universities in future. This would have a greater impact on the quality of graduates in general than the current arrangement.

iv. Recommendations

The Committee makes the following recommendations (see also Diagram 12, below):

1) Teaching development funds should be earmarked and should be a percentage of the total MTEF allocation for teaching outputs. It is recommended that 20% of the teaching output fund be allocated to the teaching development funding. This should be done over a period of five years, which should be considered as the first implementation of a new funding arrangement for teaching development. The magnitude of the teaching development fund should be reviewed after a period of five years.

2) Teaching development funding should be distributed to universities on the basis of degree-credit FTE students (FTE students that have passed the study courses). The use of the new basis would eliminate one of the unintended consequences of the current policy on teaching development funds – namely, that as the graduate output of a particular university becomes weaker, its reward in the form of obtaining teaching development funds increases.

3) Of the teaching development fund, 2.5% should be top sliced and allocated for a national development with appropriate organisational structures for supporting national, regional and institutional teaching development initiatives. The fund should be focused on training and developing staff at universities where high-level teaching development skills are not readily available, together with regular monitoring of the impact of such interventions. This should be done under the authority of the CHE.

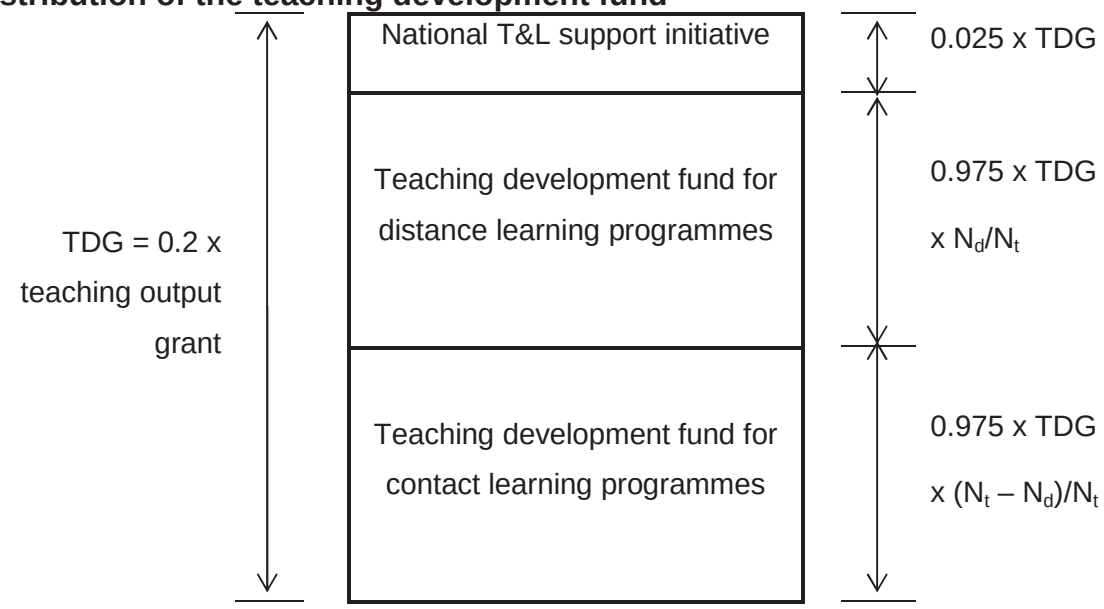
4) The importance of learning resources and the use of technology in the improvement of teaching needs to be recognised and funded from the infrastructure and efficiency funding allocations if the cost does not allow this to be funded from the teaching development allocations to universities.

5) The remaining 97.5% of the teaching development fund should be divided into two segments: one for allocation to distance education programmes, and the other for allocation to contact learning programmes. The division should be on the basis of the relative share of enrolled full-time equivalents in the year n-1 (where year n is the first year of the implementation of the new funding arrangement) in the two learning modes. The proposed division is shown in Diagram 12 (below).

6) The allocation of teaching development funds and the utilisation of these grants must be linked to recommendations made based on the CHE institutional audits. Guidelines for improving teaching and learning have been provided in these institutional audits.

The implementation of the teaching development funds has to be monitored very closely.

Diagram 12: Schematic representation of the proposed make-up and distribution of the teaching development fund

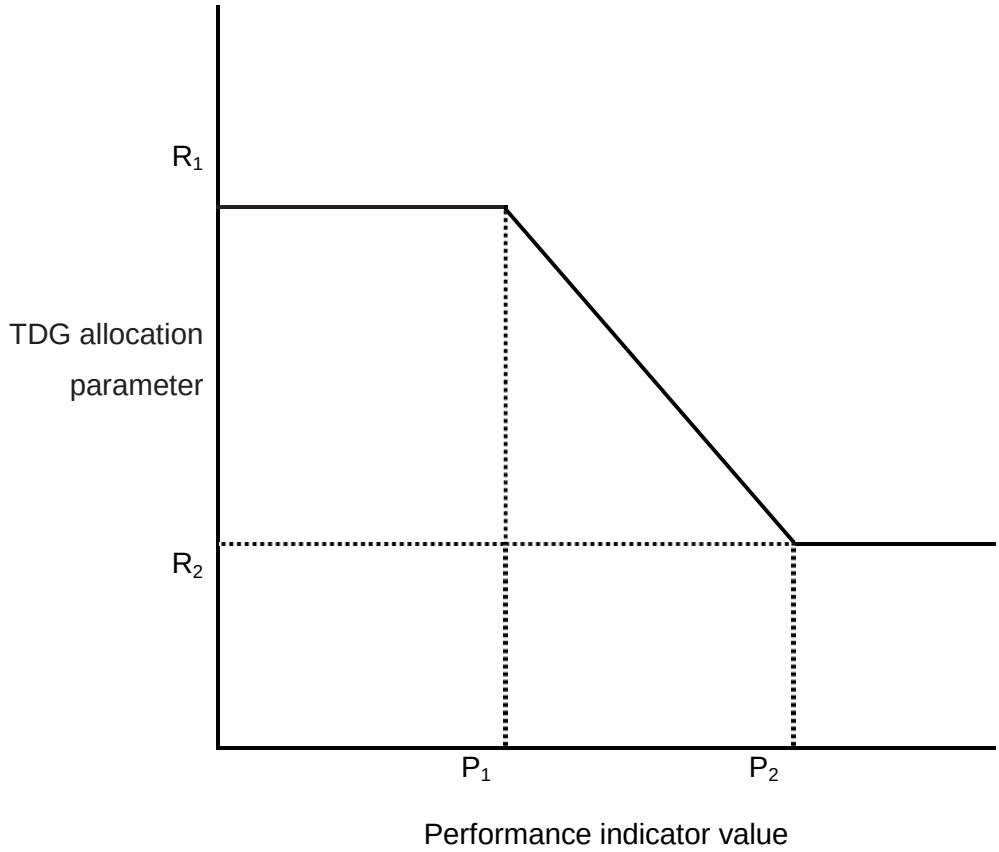


N_t = Total enrolled FTEs in the higher education system

N_d=Total enrolled FTEs in distance education programmes

7) Within the distance education and contact learning components of the teaching development fund, the maximum potential allocations to be made to institutions should be determined according to the following mechanism (see Diagram 13, below):

Diagram 13: Proposed mechanism for determining the maximum potential TDG allocation to individual institutions



- The DHET should determine the performance indicator values P_1 (expected lowest performance of any university at the end of the five-year TDG cycle) and P_2 (desired upper level of performance for most institutions – some already perform above this level).
- No performance-related additional TDG is allocated to an institution with a performance below P_1. Institutions performing above level P_2 will still receive a minimum level of TDG.
- The TDG allocation parameter is a Rand value allocation per student to a particular institution, and is dependent on the number of unsuccessful students in the institution.
- The values of R_1 and R_2 will be determined by the total funds available in the teaching development fund.

8) All universities should receive a teaching development fund, to address the number of graduates as well as the quality of graduates emerging from the system. This should be done at least in the short term.

9) The performance indicator value should be the success rate of the university under consideration, which makes annual performance assessments possible. At the end of the five-year period the improvements in graduations should be evaluated.
10) Upon determination of the maximum potential allocation to all institutions, each university should be informed of this value and, on this basis, should be invited to submit a teaching development plan for consideration and approval by the DHET.
11) In the case of distance education programmes, universities should be expected to show focused utilisation of teaching development funds on courses or modules with large student registrations.
12) Approved plans should then be funded up to the maximum potential allocation for an initial period of five years, with annual increases at the same rate as the increase in the overall teaching output grant.
13) Institutions should provide annual progress reports, and teaching development fund allocations in years two to five of each cycle of funding must depend on demonstration of suitable progress.
14) The Minister could ask Councils of universities that show declining or stagnant levels of performance, as measured by decreasing success rates during the five-year cycle, to explain the trends and the corrective measures that are being put in place to address the issue. The Minister could also give consideration to routing the teaching development fund allocation of such a university to the National Teaching Development initiative for directed expenditure in assisting the university in question to better focus its teaching development initiatives. All universities with pass rates lower than P may request to participate in this initiative.

In the section dealing with distance education provision the following recommendations with regard to teaching developments funds are also of relevance:

15) Portions of the teaching development funds should be set aside to support two innovations:
    a) The collaborative development of learning resources in areas of national importance, which will be made available to all institutions as OER.
    b) Action research into the use of digital technology for quality, cost-effective teaching and learning in the South African context.

It is envisaged that the following improvements will flow from these recommendations:

- The size of teaching development funds per university will be stabilised.
- Universities will know their allocations for a period of five years.
- UNISA's share of the teaching development funds will decrease, with a migration from 66.4% to 22.8%.
- All universities will receive teaching development funds.
- The further decline of the teaching development funds will be prevented and the teaching development funds will be 20% of the teaching output grant.

The outcomes of the abovementioned recommendations are shown in Tables 85 and 86 (below).

Table 85: Earmarked teaching development funds based on the recommendations

University	Teaching development units and shares														Weighted total
	Contact tuition							Distance tuition							
	Student FTEs in 2009[1]		Success rate in 2009 (B/A) (%)	Weight based on (B/A) 2) (C)	Student FTEs unsuccess-ful 2009 (D)=(A-B)	Weighted unit totals (E)=(D*C)	Share of devt funds (N) (%)	Student FTEs in 2009[1]		Success rate in 2009 (G/F) (%)	Weight based on (G/F)[2] (H)	Student FTEs unsuccess-ful 2009 (J)=(F-G)	Weighted unit totals (K)=(H*J)	Share of devt funds (M) (%)	Contact and distance[3] (E)+0.4041(K)
	Enrolled (A)	Completed (B)						Enrolled (F)	Completed (G)						
CPUT	22 388	17 721	79.2	1.042	4 666	4 863	4.5	30	23	77.6	1.122	7	8	0.0	4 866
UCT	17 916	15 075	84.1	1.000	2 841	2 841	2.6	0	0		1.500	0	0	0.0	2 841
CUT	9 435	6 847	72.6	1.372	2 588	3 550	3.3	190	141	74.3	1.285	49	63	0.1	3 575
DUT	17 197	13 053	75.9	1.205	4 144	4 994	4.6	0	0		1.500	0	0	0.0	4 994
UFH	8 484	6 708	79.1	1.046	1 776	1 858	1.7	0	0		1.500	0	0	0.0	1 858
UFS	17 757	12 836	72.3	1.386	4 921	6 819	6.3	1 882	1 293	68.7	1.500	589	883	1.0	7 176
UJ	37 384	28 069	75.1	1.246	9 314	11 604	10.7	0	0		1.500	0	0	0.0	11 604
UKZN	24 121	18 992	78.7	1.063	5 129	5 452	5.0	3 517	1 953	55.5	1.500	1 564	2 346	2.6	6 401
UL	13 324	10 669	80.1	1.000	2 655	2 655	2.5	0	0		1.500	0	0	0.0	2 655
MUT	7 319	5 694	77.8	1.110	1 625	1 804	1.7	0	0		1.500	0	0	0.0	1 804
NMMU	16 130	12 048	74.7	1.265	4 082	5 165	4.8	1 659	1 203	72.5	1.375	456	627	0.7	5 418
NWU	21 119	17 854	84.5	1.000	3 265	3 265	3.0	11 095	8 970	80.9	1.000	2 124	2 124	2.4	4 124
UP	31 263	25 256	80.8	1.000	6 007	6 007	5.6	6 079	4 809	79.1	1.044	1 270	1 326	1.5	6 543
RU	5 542	4 615	83.3	1.000	928	928	0.9	0	0		1.500	0	0	0.0	928
UNISA	474	407	85.8	1.000	68	68	0.1	134915	80622	59.8	1.500	54 293	81 440	91.0	32 977
SU	19 449	15 977	82.1	1.000	3 473	3 473	3.2	0	0		1.500	0	0	0.0	3 473
TUT	38 890	27 687	71.2	1.440	11 203	16 136	14.9	1 100	675	61.3	1.500	426	638	0.7	16 394
VUT	14 357	10 561	73.6	1.322	3 797	5 020	4.6	0	0		1.500	0	0	0.0	5 020
Univen	9 766	7 684	78.7	1.066	2 083	2 221	2.1	0	0		1.500	0	0	0.0	2 221
WSU	21 240	15 302	72.0	1.398	5 937	8 299	7.7	61	34	55.1	1.500	28	41	0.0	8 315
UWC	11 521	9 020	78.3	1.086	2 501	2 715	2.5	4	4	100.0	1.000	0	0	0.0	2 715
Wits	20 317	15 804	77.8	1.111	4 513	5 012	4.6	0	0		1.500	0	0	0.0	5 012
UZ	11 816	8 950	75.7	1.213	2 866	3 476	3.2	0	0		1.500	0	0	0.0	3 476
Total	**397 211**	**306 829**	**77.2**		**90 382**	**108 224**	**100.0**	**160 532**	**99 727**	**62.1**		**60 805**	**89 497**	**100.0**	**144 389**

Source: DHET subsidy allocations for 2011/12 based on 2009 audited HEMIS data

Table 86: Earmarked teaching development funds based on the recommendations

University	New formula shares of total (%)	Old formula shares of development funds for 2011/12 (%)	Migration strategy for three years from old to new shares			Funding allocations			
			2012/13	2013/14	New shares 2014/15	2011/12 (R'000)	2012/13 (R'000)	2013/14 (R'000)	2014/15 (R'000)
CPUT	**3.370**	**0.000**	1.123	2.247	3.370	0	5 617	12 941	22 323
UCT	**1.968**	**0.235**	0.812	1.390	1.968	985	4 061	8 006	13 033
CUT	**2.476**	**0.944**	1.455	1.966	2.476	3 966	7 275	11 321	16 402
DUT	**3.459**	**0.000**	1.153	2.306	3.459	0	5 765	13 282	22 911
UFH	**1.287**	**0.770**	0.942	1.115	1.287	3 232	4 711	6 420	8 525
UFS	**4.970**	**3.482**	3.978	4.474	4.970	14 623	19 891	25 769	32 919
UJ	**8.036**	**6.083**	6.734	7.385	8.036	25 546	33 672	42 540	53 233
UKZN	**4.433**	**2.072**	2.859	3.646	4.433	8 702	14 296	21 001	29 363
UL	**1.839**	**2.010**	1.953	1.896	1.839	8 441	9 765	10 921	12 182
MUT	**1.250**	**3.486**	2.741	1.995	1.250	14 640	13 704	11 493	8 278
NMMU	**3.752**	**1.084**	1.974	2.863	3.752	4 553	9 868	16 491	24 856
NWU	**2.856**	**0.000**	0.952	1.904	2.856	0	4 760	10 968	18 919
UP	**4.531**	**1.934**	2.800	3.666	4.531	8 122	14 000	21 114	30 016
RU	**0.643**	**0.000**	0.214	0.428	0.643	0	1 071	2 468	4 257
UNISA	**22.839**	**53.939**	43.572	33.206	22.839	226 500	217 861	191 265	151 287
SU	**2.405**	**0.028**	0.821	1.613	2.405	119	4 103	9 290	15 931
TUT	**11.354**	**2.256**	5.289	8.321	11.354	9 474	26 444	47 931	75 209
VUT	**3.477**	**3.330**	3.379	3.428	3.477	13 984	16 895	19 744	23 030
Univen	**1.538**	**0.520**	0.859	1.199	1.538	2 184	4 297	6 904	10 187
WSU	**5.759**	**6.941**	6.547	6.153	5.759	29 146	32 734	35 441	38 147
UWC	**1.880**	**2.459**	2.266	2.073	1.880	10 328	11 332	11 943	12 456
Wits	**3.471**	**5.046**	4.521	3.996	3.471	21 190	22 605	23 017	22 991
UZ	**2.407**	**3.378**	3.055	2.731	2.407	14 186	15 273	15 730	15 946
Total	**100.000**	**100.000**	**100.000**	**100.000**	**100.000**	**419 920**	**500 000**	**576 000**	**662 400**[4]

Source: DHET subsidy allocations for 2011/12 based on 2009 audited HEMIS data

Notes for Tables 85 and 86 (above):

1 The student data excludes research masters and all doctoral students.

2 A weight of 1.5 per failed FTE student is applied to universities with an average success rate up to 70%, after which the weight decreases linearly between 70% and 80% success rates to a weight of 1.0% per failed FTE student at 80% success rate, and then remains at a weight of 1.0% for universities with an average success rate higher than 80%.

3 In 2009, FTE enrolled students (excluding doctoral and research masters students) in distance education numbered 160 532, compared to 397 211 in contact tuition. This implies that distance education students comprise 40.41% of contact students.

4 This assumes an increase of 15% from the previous year, which includes the final top-slice increase from 18.5% to 20%.

9.2.2 Research development

i. Introduction

The DHET allocates research development grants to public universities to develop research capacity and improve research productivity. Research development grants are currently determined through a shortfall on an institution's normative and actual research output, which then may be allocated back to the institution. In the current system, where a) research development grants are directed only towards those institutions that did not reach the normative levels of research output, b) research development grants are not necessarily used for research development purposes, and c) no periodic assessment takes place, these funds do not appear to be yielding the maximum desired results.

The DHET constituted a Task Team on Higher Education Research Development Grants in April 2007, following consultations with HESA, the CHE and the NRF for nomination of possible members. The appointment of the Task Team was necessitated by the pending shift of research development grants from block to earmarked funds. The Task Team was given the mandate of reviewing the implementation of the funding policy with regard to research development funds and making recommendations with regard to the determination and allocation of research development funds to universities. The recommendations in this section of the current report are based on the Task Team's report to the Minister.

ii. Policy imperatives for enhanced research outputs through research capacity development

Education White Paper 3: A Programme for the Transformation of Higher Education (DoE 1997) sets the following goal, among others, for the higher education system: "To secure

and advance high-level research capacity which can ensure both the continuation of self-initiated, open-ended intellectual inquiry, and the sustained application of research activities to technological improvement and social development" (Goal 7 at the national or system level, under heading '1.27 Goals'). It further states: "Strengthening the role of higher education in the national research system requires increasing current research capacity, protecting current research resources, finding new resources of research funding, and using all these resources more effectively" (point 2.90 under heading 'Research'). There is thus a need to increase quantity, enhance existing quality and diversify research funding sources.

The White Paper further notes that "existing research capacity, in particular the nation's centres of research excellence, must be sustained, and essential new centres created, despite the pressures of numerical expansion, diversification and budget stringency" (point 2.90 under heading 'Research'). The White Paper acknowledges that research capability in South Africa's universities is of fundamental importance to national self-reliance. It states, however, that "good scholarship (which should characterise all higher education academic staff) is not the same as research competence (which a minority of academic staff in the sector as a whole will either need or possess)" (point 4.53 under heading 'Earmarked funds for other specific purposes'). Therefore, excellence in teaching does not necessarily depend on research experience, but benefits from it. The White Paper (DoE 1997) therefore concludes:

> In view of the national strategic importance of research, and in order to ensure that the relatively scarce funds available for the development of research capability are well targeted, public funds for participation in research, whether basic or applied, should not be spread across all faculties or schools in all institutions but should be concentrated in those areas where there is demonstrable research capacity or potential, in both HDIs and HWIs [historically white institutions]. (DoE 1997, point 4.54 under heading 'Earmarked funds for other specific purposes')

This latter point indicates a need at national and/or institutional levels for some assessment or determination of potential, prior to the allocation of research funding, so that the investment is done wisely and strategically.

The NPHE (MoE 2001) endorses the White Paper's approach as follows:

> …the Ministry does not favour a 'blanket' approach to the allocation of research resources, regardless of the research profile and capacity, including potential, of institutions. The Ministry therefore proposes, in line with the mission and programme differentiation approach, to concentrate research resources where there is demonstrated capacity or potential based on approved mission and programme profiles. (MoE 2001: 75)

Thus, the awarding of earmarked funds to build research and teaching capacities should be based on research and teaching development within the context of staff and infrastructure development plans (MoE 2001).

iii. Principles and important factors for the determination and allocation of research development funds to public universities

i. Research is central to the core business of all universities and all universities need to be supported in order to develop and enhance their research capabilities and productivity.

ii. While all universities should have research as part of their mandate, the nature and extent of research should be aligned with the institution's organisational setting, mission and capacity as well as the needs of the local community and the nation as a whole.

iii. There is a need to resource institutions equitably, taking into account diverse and differentiated backgrounds, missions, capacities and needs.

iv. A policy and mechanism for the promotion and monitoring of institutional research development is required.

v. Each university should be required to show improvement in performance over time, as even the currently high-performing institutions need to improve, to meet national policy goals and targets and enhance international competitiveness.

vi. The allocation should be over a longer term, in order to make a visible and sustainable impact. This will enable universities to plan for longer-term research capacity development.

vii. A range of factors influence institutional productivity. These range from teaching loads and staff qualifications to research facilities and number of postgraduate programmes.

viii. Good research leadership and research management are recognised as having a significant impact on research output.

ix. Even though there have been improvements in the system's research outputs in the past few years, there is a *huge need for greater numbers of masters and doctoral graduates from all universities* and for an *improvement in the proportion of academic staff with doctoral qualifications at universities*.

x. Within the higher education system there is a growing recognition of the importance of accountability regarding the use of funds, accompanied by an increased reliance on cyclic planning, monitoring and evaluation of the utilisation of funds and the implementation of initiatives. This is a significant accountability shift, which reflects the importance of planning and management in improving research outputs and the use of research development funds.

xi. Continual self-assessment by institutions and cyclic evaluation procedures by the DHET are important for the improvement of quality research outputs and the performance of the system as a whole with regard to the development of research capacity as well as research outputs.

xii. The policy for the determination and distribution of research development funds cannot be considered in isolation from other developments affecting universities, such as changes to the teaching development funds and certain aspects of the HEQSF.

iv. Inputs received from role-players

i. There is still a great need for the research development funds, for the following:

- Staff development and capacity building in research methodology and research techniques.
- Improvement of staff qualifications.
- Research running costs for emerging researchers.
- Postgraduate students' bursaries.
- Matching funds for NRF research awards.
- Supporting the development of niche research areas in HDIs.
- The developmental trajectories of research-intensive universities in South Africa.
- The creation of research infrastructure, such as expensive equipment.

ii. While it is essential to develop niche research areas in HDIs, the developmental trajectories of the research-intensive universities in South Africa are equally important. The research-intensive universities play a significant role in the production of suitably

qualified academic staff and researchers in the numbers required to support growth in the university system as well as growth in knowledge production and innovation in South Africa and in Africa more broadly, thus helping to lessen our dependence on first-world universities for this task.

iii. A *stable funding model is needed* to enable research growth in research-intensive universities while enabling the development of research niche areas in HDIs. This would be in line with the view put forward in the Green Paper for Post-school Education and Training (DHET 2012d), that the "university sector should comprise a continuum of institutions, ranging from specialised, research-intensive universities to largely undergraduate institutions, with various levels of research focus and various postgraduate niches at masters and/or doctoral level" (DHET 2012d: 40).

iv. The allocation methodology should be based on research development plans, evaluated regularly and continued only if there is a significant rate of return in the form of research outputs. It was proposed that the research development fund not be provided to those who fail to reach their targets and that increased support be given to universities that are well governed and are striving to produce increased numbers of trained students and to improve the quality of their research (rather than just focusing on quantity). It is important to reward those making progress rather than the inefficient and ineffective universities.

v. It was also proposed that universities that deliver low levels of research outputs not be awarded research development funds based on a formula. Rather, a thorough analysis should be undertaken of why that institution is not meeting set targets. Such an institution should then be requested to develop a detailed research plan, with specific targets and research foci in specific areas of strength; and the grant should be carefully managed to ensure that the funding is applied to reach these targets. The institution must be held accountable against these targets, and if research targets are not met the funding should be adjusted downwards or withdrawn.

vi. Several universities were of the opinion that research development funds should be scrapped and that the funds should be added to the actual research output grants. This suggestion was based on the observation (which has been articulated at several points in the current report) that the development grants reward weaker and weaker performance of universities.

vii. Another proposal made was to retain the grant but to incorporate it into the block grant funding, rather than having an earmarked fund, thus giving universities more discretion in the utilisation of these funds.

viii. The research development fund must have a component to support development that is not only related to success, but also to promoting transformation in institutions. This

should be not only in terms of the demographics of the student intake, but also in terms of the demographics of staff within the institution. Aspects of the grant should promote enrolment and success of doctoral students from disadvantaged, rural and poor backgrounds, particularly in terms of initiatives that aim ultimately to channel such students into the staffing establishment of institutions.

ix. A component of the allocation should be to promote activities across universities, and to promote collaboration with the various research councils.

x. The research development fund needs to be increased, with a baseline grant allocation to all universities. This allocation should be divorced from the current norm for research outputs. A baseline normative allocation is proposed with a sliding scale/formula and a maximum capped funding allocation that rewards research productivity, while simultaneously acknowledging historical disadvantages and the transformation agenda of the country.

xi. It is imperative to build on existing research strengths and to focus on research-intensive universities and comprehensive institutions. A differentiated system, which funds different universities according to their missions and to the specific performance commitments they have made to government, will best serve the research needs of South Africa.

xii. Stability should be ensured with regard to the rewarding of research performance. In the last round of allocations of subsidy for the research outputs, the ‘per unit’ subsidy amount was unexpectedly reduced, which had a significant impact on institutional budgets. The amount allocated for the research development funds should only be decided once the full subsidy for research outputs has been allocated.

During the following financial years the research development funds calculated for the following universities were transferred to teaching development funds, in order for these universities to first improve their teaching outputs:

Financial year	Universities
2008/09	DUT, UL, MUT, VUT, Univen, WSU
2009/10	MUT, VUT, Univen, WSU
2010/11	MUT, VUT, Univen, WSU
2011/12	MUT, WSU

It thus appears that in the case of certain universities there is a greater need for teaching development than for research development. This suggests that the DHET should allow a university to opt for the choice of utilising research development funds for teaching development funds under certain conditions; for example, where a university's graduate outputs are low compared to other universities.

v. Recommendations

The Committee makes the following recommendations:

Research development plan

i. Each university must have a *university development plan* that includes a research development plan with goals, targets and steps for practical implementation and mechanisms for monitoring and evaluating performance. Thus, research development plans must specify measurable performance indicators and outline the process for self-evaluation and quality assurance mechanisms.

ii. Research development plans should indicate the intended funding allocations, focusing on areas of existing and potential strength.

iii. Research development plans should include a realistic budget; institutions should not rely solely on Departmental funds. Rather, they should indicate how they plan to access other funding sources in order to support their research strategies. Planned partnerships with industry and other stakeholders are encouraged. All universities should submit their research development plans to the DHET with realistic objectives and setting out practical steps for achieving the set goals. These plans must outline the development foci of the university for a three-year cycle. The Department may discuss proposals and alterations to proposals with universities as necessary.

Approval of plans

iv In assessing institutional plans the Department will solicit input and assistance from bodies such as the CHE, the NRF and/or any other relevant structures.

v. Research development funds will be allocated upon approval by the Department of a research development plan.

Determination of research development funding

vi. Research development funding will be generated through top slicing within the research output block grant and allocated as an earmarked portion of the MTEF. The Minister will determine the percentage of allocation and may adjust it downwards to maintain inflationary increases to the Rand value of actual research outputs and to compensate for increases in actual research outputs. The percentage that is top sliced should remain stable for a period of three years.

vii. Universities must be clustered into three groups based on their research output performance for the previous three years. On the basis of universities' placement in the clusters a new norm needs to be set for research outputs. The universities in the top cluster should have individual norms based on their individual level of performance.

viii. Due to the fact that the research outputs are increasing constantly, the DHET will have to revise the norms for each group every three years.

ix. In future, norms should be determined on the basis of the current performance of the university and not on the basis of institutional type. This has three advantages, namely:

a. Universities that perform way below the previous norms will not receive such extraordinarily high research development funds as a result of their poor performance.

b. It will allow for a more incremental development path, which is more in line with the current capacity of the university.

c. All universities will receive research development funds.

The three clusters and the proposed norm for the 2013/14–2015/16 funding cycle are shown in Table 87 (below).

Table 87: The proposed three clusters, and actual and proposed norms for the 2013/14–2015/16 cycle

University	Actual weighted research outputs per permanent academic staff member	Proposed norm for the 2013/14–2015/16 funding cycle
Cluster 1		
SU	2.4	2.5
UCT	2.2	2.4
RU	2.2	2.5
UP	2.0	2.2
Wits	2.0	2.1
UFH	1.5	2.1
UWC	1.5	2.0
Cluster 2		
UKZN	1.4	1.7
UJ	1.4	1.7
UFS	1.4	1.7
NMMU	1.4	1.7
NWU	1.2	1.7
Cluster 3		
UNISA	0.8	1.1
UZ	0.6	1.1
Univen	0.6	1.1
TUT	0.5	1.1
UL	0.4	1.1
CPUT	0.4	1.1
CUT	0.3	1.1
VUT	0.3	1.1
DUT	0.3	1.1
MUT	0.1	1.1
WSU	0.1	1.1

x. The proposed clustering is meant to allow the Department to set differential targets and norms, and takes into account institutional history, context, mission and previous and current performance. Thus, research plans must reflect the institution's specific development needs characteristic of its current cluster.

xi. The research development funds should be used as follows by institutions in the three different clusters:

Cluster 1 institutions need to focus on:

a. *Collaboration*: These institutions should be rewarded for collaborating with other institutions, especially those in cluster 3.
b. *Quality*: These institutions should be encouraged to focus on quality and on developing niche areas and areas of excellence that are of national importance.
c. *Equity*: Staff development at these institutions should focus on black, female, disabled and young academic staff members.
d. *Postgraduate student development*: Cluster 1 institutions need to focus on developing the future academics needed for the system as well as the researchers for knowledge production and innovation.

Cluster 2 institutions need to focus on:

a. *Improving staff qualifications*: These institutions must focus on assisting staff with masters degrees to obtain their doctorates.
b. *Developing research infrastructure*: Infrastructure that supports research, as well as a research office, may need to be developed.
c. *Improving research policy*: The use of research and research development funds must be carefully considered in order to find ways to increase quality output.
d. *Collaboration*: These institutions should be rewarded for collaborating with other institutions, especially those in cluster 3.
e. *Quality*: These institutions should be encouraged to focus on quality and on developing niche areas.
f. *Postgraduate student development*: Cluster 2 institutions must also assist in developing the future academics needed for the system.

Cluster 3 institutions need to focus on:

a. *Improving staff qualifications*: Too few academics in institutions in this cluster have either a masters or a doctoral qualification and thus the majority of research development must go towards staff development, as the lack of qualifications impacts negatively on research and teaching outputs in this cluster.
b. *Developing research infrastructure*: Infrastructure that supports research (libraries, laboratories etc.), as well as a research office, may need to be developed. It is necessary for these institutions to identify niche areas in which

the development can be focused, so as to increase the impact of the funds received.

c. *Improving research policy*: Current policy may not be assisting growth in research output, and the allocation of funds must be carefully considered.

xii. A threshold for each university should be set for percentage shortage, which will be considered for the calculation of research development funding. In other words, if the performance of a university is deteriorating and the shortage is increasing, then the university should not receive more funding for research development as a result.

xiii. Research development funding shares should be determined on a three-year basis, and the shares should remain the same for a three-year funding cycle. The shares need to be migrated over the three-year period. This will ensure stability in the research development funding allocations and will enable universities to plan for a period of at least three years.

Monitoring

xiv. At the end of each funding cycle, all institutions should submit progress reports to the DHET, indicating improvements in research performance during the funding period.

xv. Annual progress reports should be submitted, at the same time as institutional annual plans, to the Department. A prescribed format for the annual progress reports will be developed by the DHET. Administrative procedures will be kept as simple as possible so as to minimise costs both for the Department and individual institutions.

xvi. Improvement against the submitted plan is necessary in order to continue accessing research development funds. Continued eligibility for funds will depend upon performance against the approved plan.

xvii. At the end of a funding cycle, after Departmental assessment has taken place, institutions should submit an updated research development plan for the next cycle, in order to continue accessing funds.

xviii. The Department will introduce improvement measures and associated monitoring when an institution has not reached its planned goals, and may have to request input from the CHE and other stakeholders in identifying factors that may have inhibited

progress. The Department will then engage with the institution in addressing these factors.

National initiatives

xix. Aside from allocating research development funds directly to institutions, the Department should make use of funds for important national developments, as identified. These could include the provision of electronic journal resources for all institutions, the development of regional libraries of excellence, research and writing training workshops, and other initiatives that are identified.

xx. Furthermore, the Department must develop a National Research and Development Plan (NRDP) for higher education. This should reflect on and pinpoint, among other things, the current strengths and potential growth areas for the system as a whole.

xxi. The total available research funding in the DHET budget has become inadequate for the rapid growth in research outputs, and this makes it even more urgent for the government to increase the funding levels of higher education in South Africa.

The implications of these recommendations are shown in Tables 88 and 89 (below).

In Table 88 the normed and actual research outputs for 2011, as well as shortfalls and percentage of shortfalls based on the proposed norms, are given.

Table 89 shows the university shares of the research development fund based on the proposed new norms and estimated new research development funds for 2013/14 –2015/16 based on the 2011 data.

The following principles were applied in the modelling:

a) The current policy of research development funds being calculated by norms minus actual outputs still remains in place. It was applied using 2011 data in order to determine shares of funds, which were then frozen, so that the sector can migrate towards these new shares up to 2015/16.

b) The norms have been increased in such a manner that each university reflects a shortfall, and is therefore entitled to research development funds.

c) The norms in terms of research units per permanently employed instruction/research staff member are the following:

- Cluster 1: All norms are below or equal to 2.5, but each university has a unique norm;
- Cluster 2: The norm is 1.7; and
- Cluster 3: The norm is 1.1.

d) The new shares being calculated on the basis of these proposed norms should be published for a period of three years and should remain unchanged even though a university may exceed its new norm. This would ensure stability in research development funds per university for the three-year period.

Table 88: The normed and actual research outputs for 2011, as well as shortfalls and percentage of shortfalls based on the proposed norms

University	Normed research output for 2011			Actual research output for 2011			Weighted research output (WRO) (D)	WRO per academic staff member	Shortfall in output (F) = (C-D)	Share of shortfalls (%)
	Headcount of permanently employed instruction (instr)/ research staff in 2011 (HEMIS Table 3.3) (A)	Weighted research units per permanent instr/research staff (B)	Weighted research output according to norm C = (AxB)	Research public-ations Weight = 1.0	Graduates (HEMIS Table 2.13)					
					Research masters Weight = 1.0	Doctorates Weight = 3.0				
CPUT	763	1.10	839.3	141.79	101.000	13	281.790	0.369	557.510	8.24
UCT	1 055	**2.40**	2 532.0	1 314.40	561.085	163	2 364.485	2.241	167.515	2.48
CUT	269	1.10	295.9	47.31	28.500	5	90.810	0.338	205.090	3.03
DUT	592	1.10	651.2	88.88	48.000	14	178.880	0.302	472.320	6.98
UFH	291	**2.10**	611.1	180.81	120.860	44	433.670	1.490	177.430	2.62
UFS	846	1.70	1 438.2	568.50	287.170	107	1 176.670	1.391	261.530	3.87
UJ	871	1.70	1 480.7	774.35	262.000	68	1 240.350	1.424	240.350	3.55
UKZN	1 470	1.70	2 499.0	1 250.37	480.432	154	2 192.802	1.492	306.198	4.53
UL	806	1.10	886.6	147.55	104.824	17	303.374	0.376	583.226	8.62
MUT	193	1.10	212.3	26.24	0.000	0	26.240	0.136	186.060	2.75
NMMU	579	1.70	984.3	351.44	262.957	59	791.397	1.367	192.903	2.85
NWU	1 194	1.70	2 029.8	733.59	365.504	115	1 444.094	1.209	585.706	8.66
UP	1 281	**2.20**	2 818.2	1 314.82	670.240	206	2 603.060	2.032	215.140	3.18
RU	319	**2.50**	797.5	358.51	163.750	57	693.260	2.173	104.240	1.54
UNISA	1 515	1.10	1 666.5	797.62	190.326	93	1 266.946	0.836	399.554	5.91
SU	939	**2.50**	2 347.5	1 148.25	637.714	150	2 235.964	2.381	111.536	1.65
TUT	836	1.10	919.6	242.85	131.000	28	457.850	0.548	461.750	6.83
VUT	334	1.10	367.4	75.06	26.000	2	107.060	0.321	260.340	3.85
Univen	325	1.10	357.5	130.85	40.500	9	198.350	0.610	159.150	2.35
WSU	607	1.10	667.7	45.16	9.937	4	67.097	0.111	600.603	8.88
UWC	536	**2.00**	1 072.0	346.33	209.000	80	795.330	1.484	276.670	4.09
Wits	1 044	**2.10**	2 192.4	1 037.07	533.780	169	2 077.850	1.990	114.550	1.69
UZ	270	1.10	297.0	69.25	46.000	19	172.250	0.638	124.750	1.84
Total	**16 935**		**27 963.7**	**11 191.00**	**5 280.579**	**1 576**	**21 199.579**	**1.252**	**6764.121**	**100.00**

Table 89: University shares of the research development fund based on the proposed new norms and estimated new research development funds for 2013/14 2015/16 based on 2011 data

University	Share of research development funds				Funding allocations				Change in funding from 2012/13–2015/16
	2012/13 (%)	2013/14 (%)	2014/15 (%)	2015/16 (%)	2012/13 (R'000)	2013/14 (R'000)	2014/15 (R'000)	2015/16 (R'000)	(R'000)
CPUT	4.04	5.44	6.84	8.24	7 137	10 164	13 449	17 016	9 879
UCT	0.00	0.83	1.65	2.48	0	1 543	3 246	5 113	5 113
CUT	2.24	2.51	2.77	3.03	3 965	4 683	5 444	6 260	2 295
DUT	5.55	6.02	6.50	6.98	9 806	11 259	12 788	14 416	4 610
UFH	1.22	1.69	2.15	2.62	2 155	3 152	4 237	5 415	3 260
UFS	2.23	2.78	3.32	3.87	3 943	5 188	6 530	7 982	4 039
UJ	0.00	1.18	2.37	3.55	0	2 214	4 658	7 336	7 336
UKZN	0.00	1.51	3.02	4.53	0	2 820	5 934	9 346	9 346
UL	22.11	17.61	13.12	8.62	39 090	32 917	25 791	17 801	**- 21 289**
MUT	2.09	2.31	2.53	2.75	3 703	4 323	4 978	5 679	1 976
NMMU	0.00	0.95	1.90	2.85	0	1 777	3 738	5 888	5 888
NWU	5.57	6.60	7.63	8.66	9 856	12 340	15 004	17 877	8 021
UP	0.00	1.06	2.12	3.18	4	1 984	4 171	6 566	6 562
RU	0.00	0.51	1.03	1.54	0	960	2 020	3 182	3 182
UNISA	22.77	17.15	11.53	5.91	40 258	32 048	22 665	12 195	**- 28 063**
SU	0.00	0.55	1.10	1.65	0	1 027	2 161	3 404	3 404
TUT	2.77	4.13	5.48	6.83	4 906	7 710	10 767	14 093	9 187
VUT	3.08	3.34	3.59	3.85	5 448	6 237	7 064	7 946	2 498
Univen	8.16	6.23	4.29	2.35	14 431	11 635	8 433	4 857	**- 9 574**
WSU	11.90	10.89	9.89	8.88	21 036	20 355	19 436	18 330	**- 2 706**
UWC	1.38	2.28	3.19	4.09	2 442	4 269	6 267	8 444	6 002
Wits	0.00	0.56	1.13	1.69	0	1 055	2 220	3 496	3 496
UZ	4.89	3.87	2.86	1.84	8 640	7 237	5 620	3 807	**- 4 833**
Total	**100.00**	**100.00**	**100.00**	**100.00**	**176 820**	**186 900**	**196 620**	**206 451**	**29 631**

9.2.3 Training the next generation of academics

i. Introduction

In 2011, HESA published a *Proposal for a National Programme to Develop the Next Generation of Academics for South African Higher Education* (HESA 2011a). The report a) identifies strategies and mechanisms for developing the next generation of academics, and especially black and women academics, b) identifies the conditions that are critical at national and institutional levels for developing a next generation of academics, and c) proposes a funding model and budget that are cost-effective and sustainable.

HESA (2011a) argues that South African universities face a multi-dimensional crisis in attracting, appointing and retaining academic staff due to the fact that academia is not a particularly attractive career option, given low salaries, expanding student numbers and consequent heavy workloads, and issues of institutional culture, among others.

ii. Constraints in the development of the next generation of academics

According to HESA (2011a), the first major challenge is that the current academic workforce remains unrepresentative of the South African population; it is still predominantly white and male and many academics are ageing. About a fifth of academics are due to retire in less than a decade, including nearly half of the professoriate, and the concern is that there are insufficient numbers in the existing academic and postgraduate pipelines to replace them. The second major challenge is the current limited output of masters and doctoral graduates. The doctoral pipeline is of particular importance in developing the next generation of academics (HESA 2011a).

Table 90 (below) shows doctoral graduates from 1994–2011. It is evident from the table that considerable improvements in the numbers and proportions of black and women graduates have been made since 1994. HESA (2011a) notes that there are other salient factors to consider, which have been highlighted in the reports from ASSAf (2010) and the CHE (2009b). These factors include the following:

a) South Africa produces an extremely small number of doctoral graduates in relation to its economic and social development needs.

b) South Africa's PhD growth rate remains significantly lower than that of other countries.

Table 90: Doctoral graduates, by gender and race (1994–2011)

Year	Male	Female	White	Black	Total
1994	518	219	666	71	737
%	70.3	29.7	90.4	9.6	100
2000	572	400	674	298	972
%	58.8	41.2	69.3	30.7	100
2007	744	530	691	580	1 274
%	58.4	41.6	54.4	45.6	100
2009	807	573	697	675	1 380
%	58.5	41.5	50.5	48.9	100
2011	915	660	725	837	1576
%	58.1	41.9	46.4	53.6	100

Source: DHET (2012e)

Note: The race of three individuals in 2007, eight in 2009 and 14 in 2011 was unknown.

c) While the proportion of women and black graduates has increased significantly, numbers of women and black graduates remain low relative to men and white graduates.

d) The national benchmark doctoral graduation rate is 20% but the graduation rate in 2011 was only 12%.

e) The average age of South African PhD graduates is higher than in other countries. According to the CHE (2009b: xxii), the mean age of doctoral graduates is 40 years, while a fifth of PhD graduates are 50 years at the time of graduation (ASSAf 2010: 50).

f) The majority of PhD graduates, according to ASSAf (2010), are in the fields of education, economic and management sciences and religion.

The following additional constraints hamper the development of the next generation of academics (HESA 2011a):

a) The availability and quality of research infrastructure, facilities, and equipment (including information and communication technologies, library holdings etc.) are a constraint on the enrolment and production of doctoral graduates.

b) The fact that only a third of the academic staff at universities currently hold a PhD, and are thus eligible to supervise PhD students, hampers the expansion and management of doctoral education.

c) The current rate of state expenditure on the higher education sector is inadequate, given that working conditions within higher education show signs of deterioration as a result of increasing student-to-academic staff FTE ratios. The growing student numbers have not been accompanied by concomitant increases in academic staff numbers, and there is limited funding for research programmes, including funding for postgraduate students.

d) Academic salaries are simply not competitive with public- and private-sector salaries, and institutions in small towns, and rural institutions, experience challenges in attracting and retaining academics.

e) The struggle of historically white institutions to attract and retain black and women academics can be attributed to alienating institutional cultures that prevail in those institutions.

f) There is a continuing loss of academic expertise through the 'brain drain', which has its basis in political and social conditions.

iii. Next Generation Development Programme

HESA (2011a) proposes the Next Generation Development Programme with the purpose of facilitating the quantitative growth and qualitative development of the next generation of academics for the South African/African higher education sector, through the establishment of appropriate national and institutional – and, where relevant, multi-national – structures, processes and activities. The purpose of the programme is to focus on increasing the number of South African scholars that embark on academic careers and to employ academics from the rest of Africa, especially given the relatively high numbers of African scholars pursuing PhDs in this country.

The expected outcomes of the Next Generation Development Programme are as follows:

1) An increase in the numbers of South African black and women academics throughout the higher education system.

2) The development of staff capacity across the system in order to develop the capacity of the next generation of academics, to enhance their ability to produce research and publish, teach a diverse student body, contribute to the transformation of institutional cultures and participate in community development projects.

3) The development of a next generation of academics with a clear career path within academia.

4) Inter-institutional co-operation in the setting up and management of programmes focusing on developing the next generation of academics.

iv. The DHET initiatives in developing future generations of academics

The DHET is in the process of developing a comprehensive plan titled *Developing Future Generations of Academics, A whole pipeline approach*. A considerable amount of work still needs to be done but of importance for funding purposes is that it is anticipated that a much higher number of 'pipeline' academics will have to be trained, compared to the HESA proposal of 300 per year, to replace the retiring academics and those that leave the profession for various reasons, and to cater for growth in student numbers which, it is anticipated, will be at an average rate of 3% per year. The DHET estimates at least 1 000 new academics must be appointed annually to ensure that the student-to-academic staff FTE ratio does not deteriorate even further. The DHET's proposal also entails talent being identified much earlier and students already being involved in the programme by third-year level, because the pool at PhD level is too small. Furthermore, provision will have to be made for dropouts, for students that will leave the programme for employment in the economy and for those who opt to leave the country, whether temporarily or permanently. The DHET foresees an extensive programme supported by an estimated 11 250 scholarships, which would produce approximately 1 000 new lecturers per year.

v. Recommendations

The Committee makes the following recommendations:

a) The Committee supports the approach that the DHET is taking in its draft proposal for the development of future generations of academics and acknowledges that additional funding would be needed for the initiative. This make the need for the appropriate level of government funding for higher education all the more urgent. Without the necessary funding the higher education system will deteriorate even further, with dire consequences for the development goals as envisaged in the *National Development Plan 2030* (NPC 2012).

b) The supervisory capacity of academics must be enhanced as a matter of urgency, in order to allow for the production of increased numbers of postgraduate students. In this regard, Mouton (2012b) reiterates that the biggest challenge for the research and innovation system is the broadening of the research base, through increasing the number of PhD graduates. Not only are additional academics needed for future growth and for replacing academics leaving the system, but it is also imperative that academic staff within the system improve their qualifications. Special incentives are needed to ensure that the percentage of academic staff with PhDs is increased considerably over time, and in all fields of study.

c) Within the university development grant, a third component should be introduced, namely "Developing Future Academics". This should include the improvement of existing staff qualifications as well as the introduction of the Programme of Developing Future Academics, once this programme has been developed and funding for it has been allocated.

9.3 Institutional factor grant

i. Introduction

Smaller universities, for which there is a good educational and social rationale, are not able to benefit from economies of scale as do larger institutions. The *institutional factor* component of total subsidy is currently sensitive to *size* and the number of African and coloured South African students enrolled in contact programmes. The *institutional factor* is important in providing financial support and stability to small institutions, which are especially vulnerable to small shifts in any one of the other subsidy categories. Where a small university is also located in a rural and/or small-town setting, there are also important issues and challenges that arise with respect to the provision of student and staff accommodation, and the social responsibility of the university in such locations. Size and rural location (and

as currently, black students enrolled) introduce different dynamics, and should be considered separately, by the *institutional factor* component.

ii. Inputs received from role-players

a) The institutional factor needs to be increased to accommodate the element of the rural setting of campuses and to allow for the collapsing of the merger multi-campus allocation into it.

b) Institutional factors should be increased and the geographical location of universities should also be taken into account as an institutional factor.

c) A poverty factor is needed to assist HDIs to deal with the tremendous additional workload of assisting learners from marginalised communities to enter higher education and to be successful in their studies. The institutional factor can be reduced to fund this new proposed factor. This special support is needed for rural universities in order to achieve the following:

- Assist rural development;
- Empower local communities;
- Develop viable universities that can contribute significantly to their communities;
- Reduce the migration to cities and reduce the unemployment in urban areas;
- Accelerate the improvement in educational level of communities and the population;
- Encourage the younger generation through role models;
- Create a close relationship between universities and schools/FET colleges/TVET colleges/community centres; and
- Increase community-based research.

iii. Recommendations

The Committee makes the following recommendations:

1) The institutional factor for size and disadvantage should be retained. The Committee is of the opinion that the current size of the allocations is adequate.

2) Race should no longer be used as a factor of allocation for the institutional factor for disadvantage. Rather, South African students – irrespective of race – that originate from non-fee-paying schools should be classified as disadvantaged. The HEMIS data on the schools from which students originate will have to be improved.

3) The same formula as is used currently should be used, but the contact FTEs of students that originate from non-fee-paying schools should be used in the calculation.
4) The institutional factor grant for HDIs, as discussed in Section 6 of the current report, should be introduced. The grant should be 2% of the total block grant.

9.4 Merger multi-campus grant

i. Description and purpose of the grant

The merger multi-campus factor was formally introduced as an earmarked grant in the 2006/07 financial year as a way of compensating merged institutions for the additional costs incurred in providing teaching services on more than one official campus, although the factor was already applied within the block grant in 2004/05 and 2005/06, as incorporations and mergers commenced. Only the eight universities that had been the result of mergers were considered in the division of this grant. In 2004/05 only three mergers benefited from the multi-campus grant, namely: University of KwaZulu-Natal, North West University and Tshwane University of Technology. Since 2005/06 five more universities have benefited from the grant: Cape Peninsula University of Technology, University of Johannesburg, University of Limpopo, Nelson Mandela Metropolitan University and Walter Sisulu University. The multi-campus factor was calculated as described below.

The 2004 FTE student enrolment totals of institutions that merged in either 2004 or 2005 were divided into totals corresponding to the pre-merger institutions. Separate calculations were then made of the additional numbers of teaching units that they generated for institutional size and disadvantage. The main benefit to the merged institutions of these procedures was that they received, in 2006/07, larger institutional factor grant allocations (particularly in relation to size) than they would have if their block grants had been calculated on the basis of their being single, unified institutions.

The former Minister of Education accepted that the merged institutions would have difficulty in dividing their student enrolments for 2005 and later years into data files corresponding to their pre-merger campuses. The Minister therefore decided that the additional teaching units used to calculate the 2006/07 size and disadvantage grants for merged institutions would in future be used to calculate the merger multi-campus grant. The totals of these additional units are summarised in Table 91 (below).

Table 91: Additional TIUs for size and disadvantage allocated to merged universities (2006/07–2009/10)

University	Additional TIUs
CPUT	6 515
UJ	5 319
UKZN	2 890
UL	6 742
NMMU	5 124
NWU	3 499
UNISA	2 448
TUT	8 833
WSU	6 268

Source: MoE (2008: 5)

The amounts that the merged universities received were determined by first calculating the amounts that the universities would have received in institutional factor grants if they had not received the additional TIUs set out in Table 91. These amounts were then deducted from the institutional factor grants that they actually received, and the balances constituted the merger multi-campus grants.

The Ministerial Statement of 10 November 2009 indicated:

> A task team, consisting of members of the Department and of HESA nominees, was appointed in 2006 to consider ways in which a multi-campus factor could be incorporated into block grant calculations. This working group considered formula-driven methods of allocating additional funds to merged institutions, but concluded that each had unacceptable consequences. (MoE 2009a: 20)

In total, 33 scenarios were developed, which included modelling all campuses of all universities. It was concluded that a formula-driven methodology of allocating multi-campus grants was not desirable. Some of the scenarios also included universities with more than one campus that were not part of mergers.

The conclusion drawn in 2008 (MoE 2008) was that a modelling approach would not work in the absence of analyses of the extent to which multi-campuses resulted in higher costs being carried by institutions. It was proposed that a study of the costs involved in the multi-campus operations of merged universities be undertaken, and that any additional funding be allocated as earmarked grants. Merged institutions were expected to submit reports on the use of these funds at the end of the 2010/11 and 2011/12 financial years.

Universities that only incorporated campuses of former universities or technikons, but were not the result of the merging of universities and/or technikons, were not included in the grant. Universities that did not merge but that have more than one campus also did not qualify for the grant.

Up to 2009/10, calculations were automatically made within the block grant. To prevent inflationary increases, modelling of the Rand implications of the fixed additional funded units in the block grant were done in 2009 using 2009/10 financial data. These financial implications were implemented in 2010/11 by removing the “Merger multi-campus factor” from the block grant and highlighting it separately as an earmarked allocation. Therefore, the 2009/10 financial implications were used to freeze amounts from 2010/11–2012/13.

In the 2009 Ministerial Statement (MoE 2009a), institutions were requested to provide reports on how the multi-campus grant was used. Seven of the eight universities provided reports on the use of the grant and it was clear from the information provided that the multi-campus grant is used to cover operational expenses associated with the provision of non-academic services (such as security, landscaping etc.). Institutions that received the grant all indicated that it is not sufficient to cover the expenses associated with running a multi-campus university. Another complicating factor is the lack of a clear formula in the allocation of a multi-campus grant. An institution such as Walter Sisulu University, which merged three institutions spread over a 1 000 km radius in the Eastern Cape, gets a relatively smaller allocation than North West University, which merged with only one institution 300 km away.

Furthermore, the Department received requests from a number of universities that wanted to benefit due to the multi-campus nature of their institutions (e.g. the University of the Free State).

The 20012/13 and 2013/14 allocations were announced by the Minister in the September 2011 *Ministerial Statement on University Funding* (MHET 2011c). This decline in the allocation of the grant appears to be indicative of an intention by the DHET to phase out the multi-campus factor grant. Table 92 (below) provides a summary of the multi-campus grants for merged universities, while Table 93 (below) provides an overview of the increases or decreases in merger multi-campus grants per university.

ii. Inputs received from universities and other role-players in university education with regard to the merger multi-campus grant

A few universities made a case for the continuation and increase of the merger multi-campus grant, based on the following:

i. Where additional campuses are in under-developed rural areas, services and suppliers are more expensive and there is a premium to attract well qualified staff to the campus.
ii. Distance from the main campus makes the management of a multi-campus university very expensive.
iii. The revised funding framework should make provision for a multi-campus factor in an equitable manner as part of the institutional factor with criteria such as:

- Distance between campuses (greatest weight);
- Number of campuses;
- Geographical location (e.g. rural area); and
- Multi-campus due to mergers.

It was also argued in one submission that the earmarked multi-campus grant has served its purpose and could be incorporated into the block grant by increasing the teaching input grant, which forms part of the general expenditure and operational expenditure of the institution. In view of the problems of certain HDIs and rural institutions, it was suggested, it may even be worth considering including the multi-campus earmarked funds in the institutional factor grant in the block grant.

iii. Recommendations

The Committee recommends that the merger multi-campus grant be phased out over time and incorporated into the block grant funding, for the following reasons:

- This is in line with recommendations from institutions, that earmarked grants should be phased out because they erode the block grants over time.
- This is the only factor in the performance-based funding framework where the differences between merged and other institutions are discernible.
- It has been suggested that the multi-campus grant in some instances became an inhibiting factor for some universities in fully merging and streamlining processes and systems at the different merging partner sites.
- Other universities (i.e. not only those that merged) also run multi-campuses, and trying to factor all the special circumstances of all universities into a funding framework will overcomplicate the framework. This category is becoming increasingly complex because of the disparity between institutional provisions, and due to issues such as the proposed de-merger of University of Limpopo and MEDUNSA.

Table 92: Summary of the merger multi-campus allocations for the period 2004/05–2013/14

University	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	Total	
	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(%)
CPUT		11 110	11 877	12 850	14 118	16 123	16 200	16 200	15 552	12 960	126 992	10.4
UJ		10 760	11 503	12 446	13 674	15 615	15 600	15 600	14 976	12 480	122 654	10.1
UKZN	15 361	15 456	16 523	17 876	19 640	22 429	22 400	22 400	21 504	16 320	189 910	15.6
UL		5 309	5 675	6 140	6 746	7 704	7 800	7 800	7 800	6 240	61 215	5.0
NMMU		9 972	10 660	11 534	12 672	14 471	14 500	14 500	13 920	11 600	113 829	9.4
NWU	23 034	23 177	24 776	26 806	29 452	33 633	33 700	33 700	32 352	24 560	285 190	23.5
TUT	9 717	9 777	10 452	11 308	12 424	14 188	14 200	14 200	13 632	11 360	121 258	10.0
WSU		16 180	17 297	18 714	20 561	23 480	23 600	23 600	28 264	22 880	194 576	16.0
Total	**48 112**	**101 742**	**108 764**	**117 675**	**129 287**	**147 643**	**148 000**	**148 000**	**148 000**	**118 400**	**1 215 623**	**100.0**

Source: Data table provided by the DHET in 2012, based on subsidy allocations over this period.

Table 93: Increases and decreases in the merger multi-campus allocations year on year for the period 2004/05–2013/14

University	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11*	2011/12	2012/13	2013/14	Total	
	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(R'000)	(%)
CPUT			767	973	1 268	2 005	77	0	-648	-2 592	1 850	10.9
UJ			743	942	1 228	1 941	-15	0	-624	-2 496	1 720	10.1
UKZN		95	1 067	1 354	1 764	2 789	-29	0	-896	-5 184	959	5.7
UL			366	465	606	958	96	0	0	-1 560	931	5.5
NMMU			688	873	1 138	1 799	29	0	-580	-2 320	1 628	9.6
NWU		143	1 600	2 030	2 645	4 181	67	0	-1 348	-7 792	1 526	9.0
TUT		60	675	856	1 116	1 764	12	0	-568	-2 272	1 643	9.7
WSU			1 117	1 417	1 847	2 919	120	0	4 664	-5 384	6 700	39.5
Total	**0**	**298**	**7 022**	**8 911**	**11 612**	**18 356**	**357**	**0**	**0**	**-29 600**	**16 956**	**100.0**

Source: Data table provided by the DHET in 2012, based on subsidy allocations over this period

Note: * Values differ from university to university owing to rounding off from the nearest thousand Rand to the nearest million Rand.

9.5 National Institutes of Higher Education, and the establishment of new universities

The earmarked grants for the two National Institutes of Higher Education, in Mpumalanga and the Northern Cape respectively, are for the operational cost and planning cost of these institutes, each of which is responsible for co-ordinating the offering of higher education programmes in its province. Funding is also provided for research and planning with regard to the establishment of the new universities in these provinces.

The earmarked grants for the establishment of two new universities are supported by the Committee. The capacity of the existing university system has been under pressure for quite a while now, and increased capacity is much needed. This will also assist in the improvement of the higher education participation rate.

9.6 Infrastructure development and maintenance and equipment

i. Introduction

During the period 1997/98–2007/08, no earmarked allocations for new buildings at universities and technikons were made by the former DoE. This has led to a situation where the infrastructure and equipment of universities has deteriorated and became hugely inadequate in a period of rapid expansion of enrolments in the higher education system. Since 2006 government has invested more than R6.8 billion in the upgrading and expansion of infrastructure across South Africa's 23 existing universities. The DHET allocated a further R6 billion for infrastructure expansion for 2012/13 – 2014/15. With enrolments having grown, from 603 000 in 2001 to 900 000 in 2011, capacity remains inadequate to accommodate the rising number of qualifying school-leavers.

Given the limited funding available, every institution has been expected to contribute from its own resources to a set of projects that have been approved by the Minister. These 'own resources' would include income derived from student fees, institutional investments and endowments; donor funding; and external loans, which the Minister has to approve. These conditions also apply for the next cycle of funding, from 2012/13–2013/14. The minimum institutional contribution towards an approved project has been in the range of 10%–50%,

depending on each institution's financial position. Final contribution proportions were based on the Department's assessment of the strength of an institution's balance sheet.

In the new round, for the period 2012/13–2013/14, the focus has shifted to addressing the infrastructure backlogs at HDIs, and universities that have campuses from HDIs. Flowing from the recommendations from the Ministerial Task Team on Student Housing (DHET 2011a), the development of student accommodation has also been prioritised for future funding allocations.

Allocations have been and will in future also be guided by national priority areas where there are severe skills shortages. For the 2012/13 round, the funding categories identified are in line with the Ministerial PME targets, which include initial teacher training, human and animal health sciences, engineering, and life and physical sciences. Other categories include the development of African languages and human and social sciences, the upgrading and development of disability units, and research infrastructure.

The HESA infrastructure and equipment study (HESA 2012) proposes a formula-driven approach to infrastructure development and the replacement of equipment.

ii. Maintenance of infrastructure and replacement of equipment

The HESA infrastructure and equipment study (HESA 2012) shows that buildings used for the educational and general programmes that are in a bad state of repair constitute a risk to students and staff alike. The study proposes that high priority be afforded to the state funding of the renewal and maintenance of existing buildings at higher education institutions, as well as of the addressing of backlogs in the maintenance of roads, open-air parking areas, open-air recreational areas and utility distribution systems (jointly termed "land improvement other than buildings"). If such funding does not form part of the block grant allocation to universities in the sense that input parameters associated with these funding needs are clearly identified and used in the calculation of the block grant, earmarked funding outside the block grant for renewal and maintenance purposes should be seriously considered. The study proposes that a state contribution percentage determined on a sliding scale could, for instance, be used for the state funding of the renewal and maintenance of the buildings in the poorest condition. Institutions with significant maintenance backlogs should receive a bigger state contribution than institutions with relatively small maintenance needs. In revising and improving the HEMIS space data system, attention should be given to the introduction of more detailed information on the funds spent on maintenance of buildings,

in order to improve the monitoring of the condition of buildings. Alternatively this type of information could form part of an additional HEMIS data focus dealing with expenditure on and investment in the various types of fixed assets.

Although nowhere specifically stated, the most probable assumption has to be that the current block grant formula does provide (indirectly) for the annual maintenance of buildings and land improvements other than buildings. Since this provision, like all other expenses of universities, is not explicitly indicated in the block grant and therefore cannot be calculated, there is no salient obligation on institutions to budget in a responsible way for the annual maintenance of buildings. The result of this could have been that the maintenance plans of universities were neglected over the past few years, especially since 2004 when the block grant formula came into effect.

A number of presentations to the Committee by universities supported the new approach by the Department wherein HDIs/historically disadvantaged campuses are allocated more funding for new infrastructure and addressing the backlogs. In the absence of dedicated funding for addressing the plight of HDIs/historically disadvantaged campuses, it is important that this approach be maintained over the short to medium term.

The *Report of the Ministerial Committee for the Review of the Provision of Student Housing at South African Universities* (DHET 2011a) provides helpful reference about the dire state of student residences at many HDIs. That report shows that by 2013 there will be a shortage of 208 000 beds, and that at least R4.4 billion is required for refurbishment of old residences.

The Green Paper for Post-school Education and Training (DHET 2012d) states that infrastructure broadly requires a dedicated fund that can be accessed by institutions to leverage external funding. It further states that it is necessary to insert into the funding formula an allocation for the construction and maintenance of buildings and infrastructure. While it is not clear how this should be implemented, the current infrastructure approach by the Department – whereby an infrastructure and efficiency earmarked grant is made available, which could be accessed on a competitive basis for new infrastructure, refurbishments and new equipment – is supported by the Committee and must be maintained.

iii. Interest on and redemption of loans

The government system of issuing loans for universities/technikons to erect new buildings and to effect other land improvements was discontinued in 1992/93, in order to keep the cumulative effect of the financing of capital projects in the fiscus within bounds. Loan authorities issued before 1992/93 are still serviced. Payment of these loans varies, depending on the funding arrangements. This earmarked grant is thus a standing arrangement that cannot be changed.

iv. National digital library for universities and research institutions

Access to scholarly journals is a challenge facing many universities in South Africa. This challenge is further exacerbated by the high costs of subscription fees to a wide range of journals, which makes it difficult for universities to maintain their collections. The envisaged expansion of the higher education system through distance education will place a greater emphasis on the availability of digital libraries and access to scholarly journals in commercially funded databases. The Digital Library Federation defines digital libraries as follows:

> organizations that provide the resources, including the *specialized* staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities. (Raitt 2000)

The DHET is keen to explore the possible establishment of a centrally funded national-level consortium based on international models that will negotiate licence agreements centrally on behalf of its member organisations (universities and research institutions). Co-operation with the DST, which has already commissioned research in this regard, will also be explored. The DHET also envisages that such a digital library should, in addition to scholarly journals and books, include resources/texts for undergraduate curricula available to all universities.

International examples

<u>Finland</u>

The Finnish National Electronic Library, FinELib, is a consortium comprising Finnish universities, universities of applied sciences, public libraries and a number of research institutes and special libraries. The consortium acquires both Finnish and international

electronic resources for the needs of research, education and learning, and promotes the availability and use of high-quality information throughout Finnish society. FinELib negotiates licence agreements centrally on behalf of its member organisations. FinELib takes part in national strategic initiatives and receives centralised funding from the Ministry of Education for the services provided to universities, universities of applied sciences and public libraries (FinElib Consortium 2012). In 2008 FinELib was recognised as one of the 24 components of the national research infrastructure.

United Kingdom

The United Kingdom's National Electronic Site Licensing Initiative (NESLI) began in 1998 (UKSG 1998). According to Woodward (2001), the major aims of NESLI are:

a) To increase and improve access to electronic journals (e-journals); and,

b) To negotiate value-for-money deals for e-journals.

NESLI is a consortium of higher education and further education academic libraries that negotiates deals with publishers through a Managing Agent. The initiative forms part of the wider Joint Information Systems Committee (JISC) Distributed National Electronic Resource (DNER) strategy, which is a managed learning environment for accessing quality-assured, electronic information resources from a wide variety of sources (Woodward 2001). These resources include scholarly journals, monographs, textbooks, abstracts, manuscripts, maps, music scores, still images, and geospatial images, as well as moving pictures and sound collections. Woodward (2001) describes the role of the Managing Agent as follows:

a) To negotiate value for money licences with scholarly publishers.

b) To handle subscriptions to e-journals.

c) To provide a single interface for access to e-journals.

d) To address the technical issues surrounding authentication.

e) To encourage the widespread acceptance of a standard Model Site Licence.

Europe

Raitt (2000) notes that there are quite a large number of activities being undertaken in European countries with respect to digital libraries – some at a European level, some at a national level, and others at a much more local level. He further mentions that some activities cover subject areas (such as economics or the humanities), and others cover types of material (such as periodicals, rare books or images), while still others focus on the issues and challenges surrounding digital libraries (such as intellectual property, digitisation techniques, or management).

One of the many examples quoted by Raitt (2000) is the international Biblioteac Universalis project, whose main objective is to make the major works of the world's scientific and cultural heritage accessible to a vast public via multimedia technologies. The aim is to exploit existing digitisation programs in order to build up a large, distributed virtual collection of knowledge and make it available to end-users via global communication networks, thus establishing a global electronic library system. The founding partners were the national libraries of France, Italy, Germany, the UK, Japan, Canada and the USA, with the national libraries of Belgium, the Czech Republic, The Netherlands, Portugal, Spain and Switzerland having since joined the project. The initiative is expected to strengthen the function of libraries and improve international availability of digitised resources, including not only bibliographic records but also information content (by integrating text, graphics, still and moving images, and sound).

The Committee recommends that national funding for such an initiative – that is, a centrally funded national-level digital library – be explored.

v. Recommendations

The Committee makes the following recommendations:

1. The Committee agrees with HESA (2012) that there needs to be an investigation into the condition of buildings and related shortages at universities to ensure informed decisions with regard to state fund allocations for the renewal and maintenance of buildings.
2. The Committee supports the HESA (2012) recommendation that the PCS (Programme Classification System), as well as the space and cost norms, be revised. It would be

useful for the DHET to use the surplus/deficits calculated on the basis of the norms as a guideline in decisions with regard to the allocation of infrastructure and efficiency funding.

3. The Committee supports the allocation of infrastructure funding on the basis of the submission of project proposals. It would, however, be more efficient if the decisions were to be informed by more reliable information on existing backlogs and conditions of buildings. The basis on which allocations are made must be transparent.
4. The prioritisation of addressing the backlogs at the HDIs and in student housing should continue until all universities are adequately equipped to offer the same quality of undergraduate education.
5. Given the various competing demands by universities (i.e. increased block grant allocation, need for more financial aid to poor but academically deserving students etc.), it is clear that the provision of an earmarked grant for maintenance and replacement of old equipment with new equipment would not be the best measure to ensure that infrastructure is maintained. Universities should be encouraged to set aside funds from their block grant for the maintenance of infrastructure. Already, a number of universities are providing, from their block grant allocation, a percentage for the renewal of infrastructure. Therefore all universities must be encouraged to follow this approach. The strategy of the DHET would be to negotiate a better funding dispensation for higher education to ensure that the block grant is increased.
6. The Department has requested that all universities submit, by 31 January 2014, a comprehensive maintenance plan outlining how old and new infrastructure will be maintained. The Committee recommends that the assessment of these plans be done in conjunction with a specialised team of infrastructure and financial experts from the sector and be linked to work undertaken on university reserves. The Higher Education Facilities Management Association also needs to be involved in these analyses. This will ensure that submitted maintenance plans and analyses are linked to the financial position of universities. This work must be undertaken by the Department using criteria and a team of experts that will assess infrastructure across the sector to ensure standardisation.
7. All universities should be encouraged to build reserves for the planned future replacement of equipment and renewal of infrastructure.
8. The financial impact of the establishment of new universities, as well as the initial seed funding and long-term subsidy implications thereof, will have to be funded by new funding. It cannot be funded from the existing funding allocations, to the financial detriment of existing universities.

9. The DHET and the DST, in liaison with universities and research councils, should investigate the possibility of establishing a national digital library that is accessible to all universities and research institutions.
10. National funding of such an initiative should be explored, and the national Department of Communications, which is in the process of reviewing the ICT policies, should be involved.

10 Student fees, and the National Student Financial Aid Scheme

10.1 Student fees

i. Introduction

Various calls have been made in recent times for ‘free higher education’. A task team was appointed by the Minister of Higher Education and Training to investigate the matter and make recommendations to the Minister. In their submissions and presentations the universities have also provided their views on ‘free higher education’, the need for student fees, and student fee capping. A summary of these inputs and submissions is provided in this section, along with the recommendations of the Committee.

ii. The relationships between public and private benefits – subsidies and fees

Universities are financed by a combination of public and private contributions: the fiscus subsidises higher education institutions, while students pay fees. This reflects the fact that higher education generates both public and private benefits, which warrants the sharing of costs. The problem of poor students not being able to afford fees is addressed through the National Student Financial Aid Scheme (NSFAS). Students are offered loans, but have the positive prospect of converting a portion of their loans into grants if they have been academically successful. So as not to encumber students excessively, the repayment of the loans is made contingent upon earning an income.

In addition, fees play an important role in providing universities with a source of revenue. Furthermore, the fact that institutions have autonomy in setting their fees means that a competitive element is introduced into the higher education ‘market’, which also helps to promote efficiency. Students ‘vote with their feet’ by choosing the institutions that they believe offer the best value in the long run in relation to the costs of attending them.

iii. Steering the system to meet economic and social needs, and the role of fees as signals

While the needs change from time to time, a strong cadre of well-qualified professionals in the fields of engineering and the built environment, the health sciences, education, and business is required to provide for sustainable development of the nation. At the same time, the foundation disciplines within the humanities and science provide a basis on which the others can develop.

There is a relationship between the price of studying and the needs of the market. Low-priced courses (low fees) may encourage demand that is unrelated to what the market needs, from a skills-provision point of view. The same happens when bursaries are widely used and reduce the burden on the family to a fixed 'Expected Family Contribution' unrelated to the cost of the particular course. This may be less problematic if such courses, such as a general BA or BSc, are in reality foundation programmes for further postgraduate development. It *is*, however, a particular problem if some courses are priced so high that demand drops – when in fact the society needs more of those graduates. This means that to the extent that funding provided by the state to universities offsets what universities charge in fees, the subsidy per student by programme should reflect not only costs of that programme but the intended signal on demand among applicants. Moreover, this signal should take into account the full cost of study for a programme (total years of study) not just the fee per year.

It is not unreasonable to expect students to invest in their personal development given that they will be the primary beneficiaries of the higher income the degree offers. They should also be expected to invest more if the returns are higher. Thus the subsidy, which offsets fees, may also take account of the future relative income from different programmes. A student loan system can cope with the differential earnings problem since the size of the ultimate loan can be larger if higher income is expected. But it should be supplemented by a grant system for programmes where costs of study are high, anticipated income is low, and fees might discourage choice of that field of study – music and drama are classic examples of this.

iv. Equitable student access – fees versus direct university subsidies

The idea of 'free higher education' in the current context is neither equitable (it becomes a state subsidy to the social groups that can afford fees) nor likely to be affordable, given other social priorities.

Equitable access is a function of affordability and student readiness. Financial constraints are a major impediment to access for all. There are two approaches, both of which require national commitment. One is to substantially increase the total state funding so that fees and fee increases can be contained. The Committee recognises the limitation of resources and numerous competing priorities, yet the education of the population must be among the leading priorities if the nation is to prosper. However, this solution does not promote equity – in fact, it simply increases the state subsidy for higher education to the rich, who can actually afford to pay for their education and accommodation.

The alternative, which the Committee thinks preferable on many grounds, is to use NSFAS such that disadvantaged students have a greater portion of the total cost of attending covered. Partial bursaries, which still require a substantial amount from a poor student, will leave that student with a significantly lower probability of succeeding. Either they have to work to earn money, or they accumulate greater and greater debt, which leads them to drop out before completion, or they go hungry, rent out their student accommodation and other sacrifices – which is surprisingly common and compromises their studies. So this mechanism only works if it is adequately funded to cover the full costs of study, with a graded means test to require those with some income to pay something.

The current threshold of NSFAS eligibility is too low, as many students in middle-income families can also not afford the fees and accommodation costs, especially if more than one child is studying. Having the funding following the students is better for reasons of equity (tax payers' subsidies to education concentrated on the poor) as well as efficiency (to some extent it promotes a more competitive market) but also allows for those universities that can raise fees to higher levels – in order to fund improved quality of offerings, improved staff-to-student ratios, more time for research, better facilities – to do so without fear of denying poor

students access. This also brings more private funding into the higher education sector, and improves the sector in aggregate.

The same arguments apply to funding student accommodation. It is well established that disadvantaged students in residence perform better than those in private accommodation, particularly if they are staying far away. Students whose homes are in reasonable proximity to the university are advantaged, while those living in rural areas incur greater costs as they need to rent accommodation and travel, be it at the university or more expensively at private dwellings. Students living even a relatively short distance from the university, such as in a township area, will find difficulty in getting to and from the university, and will be restricted in the hours they spend in libraries and the like. Moreover, the absence of necessary facilities at home (electricity, internet, some privacy etc.) further impedes their studies.

Improving both the quantity and quality of residence accommodation will likely have positive outcomes in terms of the student experience and success rates. Better capital funding of residences will help with provision of student housing. For operating costs and living costs, though, universities should charge a breakeven rate for accommodation in residence, also in order not to distort local rental markets. Students who qualify on financial grounds should receive NSFAS funding to cover the fees and living costs. Funding arrangements for university residences would have to be reconsidered in a way that moves much of the financial burden away from the student, particularly those 'not poor enough' to qualify for NSFAS funding.

v. Processes for determining and approving student fee increases

Presentations made and submissions received, with regard to the processes followed in the determination of student fees, confirm that fees are determined in an inclusive manner with all stakeholders being part of the process. The fee increases are a negotiated process with the Student Representative Councils and based on motivations and substantive information. Fee increases are informed by the budgeting processes of universities. Fee increases are also discussed with finance committees of Councils for onward recommendation to Councils, where they are discussed and formally approved. Universities argued that the fact that student fees increased from 24% of the total income of universities in 2000 to 30% of the total income of universities in 2010 is a direct result of declining government subsidies.

Table 94: Average annual percentage increase in tuition fees (2005–12)

Programme level	Under-graduate diploma increase (%)	Under-graduate degree increase (%)	Professional under-graduate degree increase (%)	Postgraduate diploma and degree increase (%)	Honours increase (%)	Masters increase (%)	Doctorate increase (%)
Average CPI (%)	**6.5**	**6.5**	**6.5**	**6.5**	**6.5**	**6.5**	**6.5**
CPUT	8.0	8.0		8.0		8.0	8.0
UCT	9.7	9.7	9.7	9.7	9.7	9.7	9.7
CUT	7.4	7.4	7.4	7.4	7.4	7.4	7.4
DUT	7.2	7.2	7.2	7.2	7.2	7.2	7.2
UFS		7.4	7.4		7.4	7.4	7.4
UKZN	7.0	7.0	7.0	7.0	7.0	7.0	7.0
UL: Turfloop	8.8	8.8	8.8	8.8	8.8	8.8	8.8
UL: MEDUNSA	6.3	6.3	6.3	6.3	6.3	6.3	6.3
NMMU	8.1	8.1	8.1	8.1	8.1	9.0	9.0
NWU 1	7.5	7.5	7.5	7.5	7.5	7.5	7.5
NWU 2	10.4	10.4	10.4	10.4	10.4	10.4	10.4
UP	8.2	8.2	8.2	8.2	8.2	8.2	8.2
RU	8.5	8.5	8.5	8.5	8.5	8.5	8.5
UNISA	7.9	7.9	7.9	7.9	8.7	8.3	12.5
SU			7.9	7.9	7.9	7.9	7.9
TUT	7.6	7.6	7.6	7.6	7.6	7.6	7.6
Univen	10.2	10.2	10.2	10.2	10.2	10.2	10.2
VUT	7.4	7.4	7.4	7.4	7.4	7.4	7.4
WSU	8.8	8.8	8.8	8.8	8.8	8.8	8.8
UWC	10.0	10.0	10.0	10.0	10.0	10.0	10.0
WITS	9.4	9.4	9.4	9.6	9.6	10.0	10.0
UZ	5.4	5.4	5.4	5.4	5.7	5.7	5.7

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

vi. Student fee increases and the extent of university financial aid

Table 94 shows the average annual student tuition fee increases per university for the period 2005–12. For all universities the student fee increases were higher than the average Consumer Price Index (CPI - inflation) except for the University of Zululand, where student fee increases were lower than the CPI.

Table 95: University financial aid: Funding for undergraduate students

Institution	Total university funding for financial aid (excluding NSFAS) for undergraduate students (R'000)					University funding for financial aid for undergraduate students obtained from tuition fee income (R'000)					Number of undergraduate beneficiaries				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
CPUT	1 871	1 880	1 609	705	1 070						503	460	314	260	215
UCT	50 923	65 254	98 228	126 191	114 290	32 324	46 992	32 998	97 218	76 121	1 980	2 248	2 867	2 943	3 139
CUT	6 436	7 546	9 600	10 272	12 145	4 017	3 390	4 820	4 112	4 860	787	896	769	770	863
DUT	17 000	5 073	984	4 584	-	-	-	-	-	-	2 659	815	82	221	
UFH			1 000	2 000	2 000								65	160	100
UFS	14 761	13 741	17 943	18 460	25 241	0	0	0	0	0	3 201	3 046	3 772	3 509	3 477
UJ	15 308	34 275	62 138	84 857	61 802	15 308	34 275	62 138	84 857	61 802	3 725	6 142	3 199	6 033	6 217
UKZN	6 270	6 986	6 847	7 362	13 618	2 011	2 024	2 111	2 257	4 120	384	952	628	623	691
UL	3 622	3 028	979	1 645	1 078	3 622	3 028	979	1 645	1 078	621	211	121	155	237
NMMU	24 556	28 464	75 676	112 812	86 301	9 067	9 520	15 228	14 930	20 035	53 458	4 610	8 518	7 696	8 205
NWU	26 105	27 241	40 350	37 123	44 598						8 125	7 962	9 882	9 107	9 862
UP	53 235	54 950	64 844	65 226	73 771	50 009	51 451	59 700	59 530	70 581	14 181	15 210	16 543	13 515	13 323
RU	8 703	12 383	19 956	27 677	18 866						274	365	505	626	368
UNISA	9 616	17 432	17 267	58 287	68 088	6 346	11 505	11 396	38 469	44 938	2 130	3 117	3 675	10 706	17 059
SU	59 292	61 083	63 306	72 237	81 411						3 977	3 925	3 955	4 146	4 295
TUT	1 710	2 077	1 809	4 867	5 769	1 710	2 078	1 809	4 867	5 769	565	958	755	2 505	2 787
Univen	4 079	3 860	2 620	3 233	2 654	4 079	3 860	2 620	3 233	1 654	1 102	1 054	902	844	571
VUT	1 876	2 694	10 363	9 135	7 666						509	583	1 059	1 194	879
WSU															
UWC	6 516	9 073	11 125	11 117	16 597										
Wits	108 980	124 481	158 468	175 711	226 619	22 518	21 386	33 905	32 804	36 029	6 858	7 291	8 918	9 397	9 642
UZ	8 335	9 675	9 427	10 559	21 033	1 000	2 450	2 550	1 500	1 859	433	568	501	533	1 270
MUT						2 621	1 947	1 912	1 699	1 921	397	350	362	316	342
Total	**301 504**	**304 615**	**514 262**	**658 898**	**652 229**	**130 404**	**170 442**	**136 752**	**249 920**	**288 969**	**105 869**	**60 763**	**50 849**	**75 259**	**83 542**

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Table 96: University financial aid: Funding for postgraduate students

Institution	Total university funding for financial aid (excluding NSFAS) for postgraduate students (R'000)					University funding for financial aid for postgraduate students obtained from tuition fee income (R'000)					Number of postgraduate beneficiaries				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
CPUT															
UCT	88 386	112 608	130 071	163 021	181 281	7 773	8 748	13 001	12 631	13 643	1 923	2 122	2 052	2 097	2 267
CUT	2 018	1 785	1 529	1 552	2 661	2 018	1 785	1 529	1 552	2 661	63	69	53	47	51
DUT	-	-	-	-	9 049	-	-	-	-	-	-	-	-	-	421
UFH	3 050	4 642	3 809	5 840	6 330						148	192	205	151	187
UFS	1 753	5 817	5 776	7 406	8 616	0	0	0	0	0	99	133	97	81	111
UJ	5 662	5 663	11 263	14 407	20 249	5 662	5 663	11 263	14 407	20 249	756	821	3 199	819	589
UKZN	4 216	5 349	6 369	6 786	3 405	1 352	1 550	1 963	2 080	1 030	224	270	258	269	149
UL	2 037			3 527		2 037			3 527		221			357	
NMMU	11 882	15 902	15 499	17 994	18 597	8 765	10 261	10 444	10 937	12 597	702	709	830	808	974
NWU	13 717	8 752	16 839	27 056	35 471						1 743	1 539	1 558	2 068	2 364
UP	21 151	31 109	34 112	38 837	43 906	20 825	30 557	33 666	38 162	43 317	7 155	9 197	10 244	9 097	8 152
RU															
UNISA	3 782	5 679	6 174	8 074	13 309	2 269	3 407	3 704	4 844	7 985	483	626	618	768	1 196
SU	6 437	7 031	10 119	12 471	14 434	6 714	7 273	8 183	12 306	13 659	599	633	578	780	810
TUT	5 789	5 097	11 507	13 583	12 833						360	278	324	367	378
Univen	3 602	2 832	4 401	7 613	8 699	3 602	2 832	4 401	7 613	8 699	535	470	552	720	814
VUT	410	196	613	1 187	1 271						63	33	57	65	69
WSU															
UWC	663	1 355	1 037	3 149	1 460										
Wits	28 645	35 916	35 309	47 668	51 495	14 712	18 080	19 545	19 483	20 211	1 996	2 236	2 296	2 351	2 416
UZ	2 976	4 007	3 501	7 904	5 574						142	142	117	239	160
MUT															
Total	**154 343**	**217 824**	**262 619**	**326 824**	**365 263**	**61 017**	**72 076**	**88 154**	**108 059**	**123 840**	**17 212**	**19 470**	**23 038**	**21 084**	**21 108**

Source: Data collated by the Ministerial Committee on the Funding of Universities from the research questionnaire

Tables 95 and 96 (above) show the extent of financial aid provided by universities to students from their own resources. This excludes NSFAS funding. Universities often argue that they also use the principle of cross-subsidisation in determining their fees. A portion of the fee income is used to provide financial aid to needy students. The data shows that in 2011 approximately a billion Rand was made available by universities as financial aid bursaries to undergraduate and postgraduate students. These funds are channelled to bursaries from trust funds, donor funding and the like, as well as from student fee income. An amount of R412.8 million of student fee income was earmarked for student bursaries. A total of 478 194 undergraduate and postgraduate students were financially assisted by universities over the period 2007–11. Universities note that if student fees were to be capped, the institutions would be unable to continue this practice of cross-subsidisation within the institution.

vii. Recommendations

The Committee makes the following recommendations:

a) Given that there are public and private benefits, the funding of universities should be predicated on state subsidies and tuition fees, with provision being made for financially needy students.

b) 'Capping of fees' should not be implemented, due to the fact that the quality of higher education will suffer and universities would not be in a position to cross-subsidise other financially needy students through university-funded student bursaries.

10.2 NSFAS

i. Introduction

Government established NSFAS in 1996 as the primary instrument for providing financial support for poor students and thus enhancing access to higher education for citizens from previously marginalised communities. Since its inception, NSFAS has grown considerably in terms of the amount of money available for annual disbursement, the number of awards to qualifying students and the diversification of the scheme through, among other things, the administration of special-purpose national and provincial government funds such as Funza

Lushaka teacher education bursaries; loan recovery on behalf of individual universities; and the management of private sector and donor funds in terms of specified criteria (DHET 2010a).

Despite the significant increase in government funding allocated to NSFAS, which is further augmented by loan repayments, the demands on the scheme continue to exceed available resources. The scheme is also not able to fund all current awardees at the levels required to fully meet their tuition and living expenses (DHET 2010a).

ii. Economic principles underlying student loan schemes

Higher education is key for developing a nation's welfare, fostering economic growth and unlocking the potential of each person to improve his/her position in society. For this reason, constraints on access to education, especially those resulting from poverty, must be addressed. There is universal acceptance of the belief that persons with the potential for benefiting from higher education should not be prevented from doing so for financial reasons.

Education is also one of the major expenditure items of all modern governments. It is therefore very important that the public funds devoted to education should be spent as effectively as possible – and NSFAS was established to ensure this.

a) The principles upon which NSFAS is based can be summarised as follows:

i. Economic development requires the constant extension of the skills of the workforce. Because resources must be devoted to acquiring education before returns occur in the form of higher marketable skills and subsequently increased earnings, education can be seen as an investment.

ii. Young people often do not have the resources necessary for investing in their education, even if they are sure that the investment will be a profitable one. Many students encounter cash-flow problems and cannot address this by borrowing from a financial institution, because they and their families cannot provide the necessary security. For these reasons, it is argued that governments should correct such 'market failures' by making funds available to needy students.

iii. It is useful to take a life-cycle perspective when deciding on whether financial assistance should be made available as grants or as loans. When viewed from a life-cycle perspective, it is clear that, once employed, the majority of university graduates earn more than average incomes, even if they were poor as students. Over their life cycles, they cannot therefore be counted among the (permanently) poor. It is thus not unreasonable to expect the recipients of higher education to pay back to society some of the funds that the public invested (through taxation) in their education. From a life-cycle perspective, the problem is not one of poverty, but the mismatch between the timing of expenditure and income. Once again, this can be addressed through loans and need not be done through grants or 'free education'.

iv. Providing higher education 'free', rather than decreasing economic inequality in fact serves to increase economic inequality. HESA (2008) argues that a big percentage of the beneficiaries of higher education are from the richer segments of society, who are able to pay a portion of the costs of instruction. A policy of 'free' higher education would in effect benefit this category of students, and resources would be transferred from the fiscus to affluent families. Through taxation, the poor would be made to pay for the education of the rich (HESA 2008). Furthermore, children from working class families are less likely to go to university than those from middle to upper income families.

v. The conclusion is that charging students fees is a rational element in the financing of higher education, provided that, on the one hand, these fees are adjusted by subsidies to account for externalities and, on the other, poor students have access to loans.

vi. The ways activities are financed have strong incentive effects. Accordingly, the prospect of accumulating debt may prove to be a disincentive for students to accept loans, especially as earning higher incomes in future cannot be guaranteed (some students drop out or experience difficulty in finding employment). For this reason, some loan schemes are made income contingent, with the obligation to repay the debt only arising once the student is in employment and earning above a certain threshold.

vii. In contrast to loans, grants (usually in the form of scholarships) do not impose obligations on students. In some countries where students have been given grants – for example, through reducing fees below the costs of providing higher education, or through giving 'free' university education – the effect has been to increase the number of years that students take to complete their degrees. This

has increased the costs of providing the education while also reducing universities' revenue, which together have resulted in a loss of quality.

viii. Such (negative) incentive effects must be avoided. However, if used in combination with loans, grants can have positive effects, as when the prospect exists of converting a loan into a grant as reward for successful completion of a course of study.

iii. Review of NSFAS

a) The Minister appointed a Committee in 2009 to review NSFAS. The committee made recommendations with regard to new student financial aid models, policy development, and a range of recommendations with regard to a) legislation, b) operations, c) systems, and d) mechanisms for raising student loan funding. These recommendations are currently being implemented by the NSFAS board and have been institutionalised through the strategic plan developed by the NSFAS board.

b) The following recommendations of the NSFAS Review Committee (DHET 2010a) are of importance for the review of the funding of universities:

i. There should be a higher education student financial aid model that progressively provides free higher education at undergraduate level to students from poor and working class communities. The model should also provide student loans on favourable terms to higher education students from middle-income families.

ii. The race-based model should be replaced by a class-based model using socio-economic criteria, while acknowledging the continuing overlap between race and class in post-apartheid South Africa.

iii. All eligible students should be fully funded at the institution of their choice, with full funding having the meaning defined in the NSFAS Act (No. 56 of 1999).

iv. All institutions should receive the average full cost of study (FCS) per student, regardless of the institutionally determined FCS. In 2009, the average FCS was R43 358 and, with the exception of five universities, all institutions would benefit from this allocation mechanism.

v. In relation to the institutions where the FCS exceeds the average, regulations should be gazetted prohibiting institutions from charging students for the shortfall between

the average and the FCS. The regulations should specify that the FCS must include tuition, accommodation, study material and aids, and travel expenses.

vi. The state must ensure that all institutions admit a prescribed minimum of poor and working class students – that is, those qualifying for NSFAS support.

vii. A simpler means test, based on the following three pieces of information, should be used to ascertain eligibility for either free education or a student loan with favourable terms and conditions:

   a. Whether the applicants matriculated at a school where they were exempt from paying fees (i.e. from Quintile 1 schools or from fee-paying schools where applicants' fees were waived);

   b. Where their family home is situated; and

   c. Household income below the lowest threshold of the SARS tax tables.

viii. The means test will identify the poorest applicants, who would receive fully subsidised higher education, achieving the objective of progressively providing free education to students from poor and working class families. Depending on the availability of funding, other qualifying applicants will be eligible for income-contingent full student loans at favourable rates of interest.

ix. Students with disabilities who qualify for NSFAS funding either in the form of loans or bursaries should be fully funded and should be required to provide proof of disability only once, at the commencement of the financial aid agreement.

x. In recognition of the fact that the dropout rate of NSFAS loan recipients is high and graduation levels are low, all institutions that admit students who receive NSFAS funding should be required to provide appropriate academic support programmes that include NSFAS students.

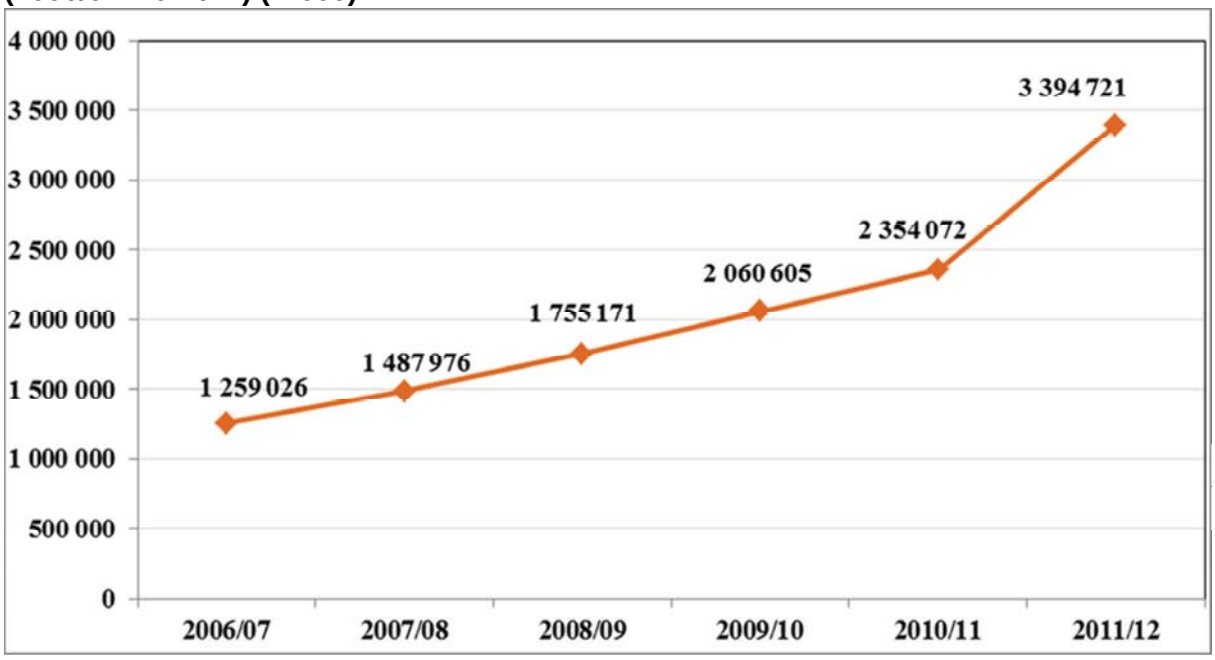
xi. The only viable source for raising the required funds for student financial aid is government funding on a sustainable basis for the short-, medium- and long-term future.

These recommendations are important and will inform some of the recommendations of the Committee with regard to the institutional factor for disadvantage as well as foundation programmes.

iv. Extent of NSFAS allocations

The DHET report *University State Budget (2000/01–2012/13)* (DHET 2012g) contains detailed information on the subsidy allocations to universities, including data on the NSFAS allocations. According to the data contained in that report the appropriation of funds for NSFAS was on average about 8.5% of the total budget for universities. The *Ministerial Statement on University Funding: 2012/13 and 2013/14* of September 2011 (MHET 2011c) indicates that the amount for NSFAS may increase substantially, to nearly R3.7 billion, and will amount to approximately 14% of the budget for universities *for these two years***.**

Figure 22: Total NSFAS allocations to universities, including recovered funds (2006/07–2011/12) (R'000)



Source: NSFAS (2012)

Figure 22 shows the amounts allocated to universities during 2006/07–2011/12. The amounts include funds that were recovered through the repayment of NSFAS student loans. The funds that were made available for NSFAS have increased 2.7 times from 2006/07–2011/12.

The funds distributed to universities also grew by more than 100% in the case of all the institutions. The ratio of the NSFAS funds available at an institution divided by the headcount undergraduate enrolments provides an indicator for comparison purposes.

Table 97: NSFAS allocations per university, and average allocations per recipient (2010 and 2011)

University	NSFAS recipients as % of undergraduate students 2010	Number of NSFAS recipients 2010	Amount allocated 2010 (R'000)	Average amount available per recipient 2010	Number of NSFAS recipients 2011	Amount allocated 2011 (R'000)	Average amount available per recipient 2011
UNISA	9	21 796	103 334	R4 741	26 164	116 619	R4 457
SU	9	1 444	21 097	R14 610	1 748	24 429	R13 975
UP	15	4 517	101 487	R22 468	4 852	114 005	R23 496
Wits	17	3 525	97 668	R27 707	3 604	110 561	R30 677
RU	19	976	13 226	R13 551	947	15 032	R15 873
UCT	19	3 038	64 045	R21 081	3 292	73 853	R22 434
UFS	19	3 272	74 212	R22 681	3 770	83 109	R22 045
UJ	22	9 056	190 026	R20 983	9 615	217 378	R22 608
NWU	22	4 875	74 190	R15 218	5 525	85 607	R15 494
NMMU	24	4 745	79 298	R16 712	5 115	89 800	R17 556
DUT	26	6 512	143 396	R22 020	8 962	163 401	R18 233
CPUT	28	8 388	124 269	R14 815	9 023	141 739	R15 709
VUT	28	5 948	101 582	R17 078	6 197	118 288	R19 088
CUT	29	3 432	62 714	R18 273	3 879	70 965	R18 295
UKZN	30	7 892	149 738	R18 973	8 158	175 753	R21 544
UWC	31	4 452	67 812	R15 232	5 182	80 774	R15 587
TUT	33	15 847	263 366	R16 619	16 147	303 543	R18 799
UFH	42	3 735	42 579	R11 400	4 730	49 266	R10 416
WSU	47	11 221	139 903	R12 468	14 165	161 820	R11 424
MUT	47	4 736	59 494	R12 562	5 542	72 383	R13 061
UZ	48	6 452	60 638	R9 398	9 203	69 539	R7 556
UL	48	7 215	113 577	R15 742	8 966	131 648	R14 683
Univen	59	5 401	82 557	R15 286	5 547	93 052	R16 775
Other			123 864			832 157	
Total		**148 475**	**2 354 072**	**R15 855**	**170 333**	**3 394 721**	**R19 930**

Sources: DHET (2012e); NSFAS (2012)

Table 97 (above) provides information on the NSFAS allocations to universities for 2010 and 2011 as well as the average allocation per NSFAS recipient. The percentage of undergraduate contact students that were NSFAS recipients in 2010 is shown in the first column. In the case of UNISA, the percentage of NSFAS recipients is expressed as a percentage of all undergraduate enrolments. The universities are sorted from the lowest

percentage of NSFAS recipients to the highest. The average amount available per NSFAS recipients for 2010 and 2011 is shown, as well as the average for the system. The actual amounts per student will differ depending on the means test as well as institutional decisions. The amounts in Table 97 include funds that were recovered through the repayment of NSFAS student loans.

Although the steep increases in NSFAS allocations are appreciated, the average amount available per NSFAS recipient remains well below the real cost of study: R15 855 in 2010 and R19 930 in 2011. Figure 23 (below) shows the percentage of undergraduate contact students that were NSFAS recipients except for UNISA, where the percentage of NSFAS recipients is shown as a percentage of all undergraduate students. It is evident that all of the HDIs had percentages of NSFAS recipients between 42% and 59%, with the exception of the University of the Western Cape, which had a percentage of 33% NSFAS recipients among contact undergraduate enrolments in 2010.

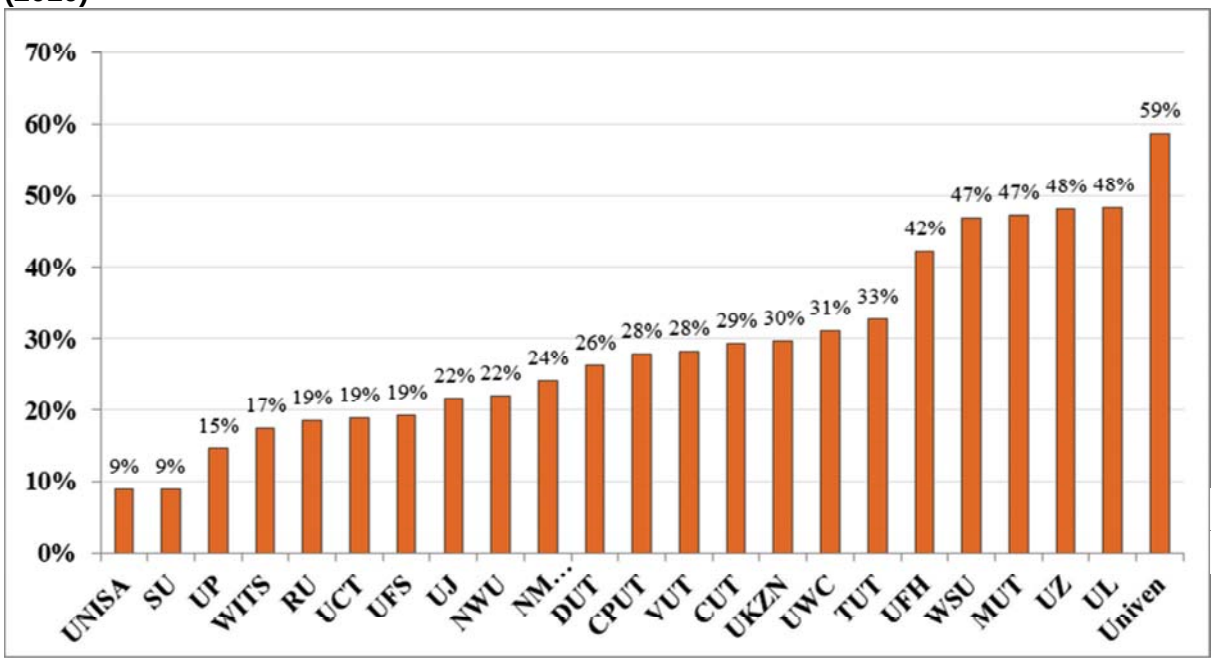
v. Recommendations

The Committee supports the recommendations made by the NSFAS Review Committee (DHET 2010a) and acknowledges that these recommendations are being implemented. The Committee would, however, like to recommend the following:

i. There needs to be continuation of the steep increases in NSFAS funding, to enable universities to award deserving students higher allocations that are more in line with the real cost of study.

ii. Academic support for NSFAS recipients in the form of foundation programmes and other academic support activities should be prioritised, to ensure higher levels of student success and returns on investment for government.

Figure 23: Percentage of undergraduate contact students that were NSFAS recipients (2010)



Sources: DHET (2012e); NSFAS (2012)

iii. The mix of loans, and grants to reward performance, should be continued, due to the private returns for successful NSFAS students, and to incentivise performance through conversion to grants.

iv. High priority should be given to improving the recovery of NSFAS loans, in order to grow the available pool of funding for future students.

v. The Committee supports the proposed new allocation system, where NSFAS will deal directly with students, since it will lead to a much more efficient system.

vi. The Committee supports the removal of race as a proxy for eligibility.

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ANNEXURE A

List of organisations and institutions that made submissions or presentations to the Committee

Submissions by higher education institutions and related bodies

Institution	**Date of submission**
Central University of Technology	14 October (Oct) 2011
University of the Free State	26 September (Sept) 2011
University of KwaZulu-Natal	30 Sept 2011
North West University	29 Sept 2011
University of Pretoria	30 Sept 2011
Rhodes University	30 Sept 2011
University of South Africa	31 Oct 2011
Vaal University of Technology	30 Sept 2011
Walter Sisulu University	4 Oct 2011
Education Deans Forum	13 Oct 2011
Higher Education South Africa (HESA)	31 Oct 2011

Presentations by universities and related bodies to the Committee

Institution	**Date**
University of Cape Town	15 November (Nov) 2011
Central University of Technology	15 Nov 2011
University of the Free State	15 Nov 2011
University of KwaZulu-Natal	15 Nov 2011
University of Venda	15 Nov 2011
University of Zululand	15 Nov 2011
University of Pretoria	16 Nov 2011
Rhodes University	16 Nov 2011
University of South Africa	16 Nov 2011
University of Stellenbosch	16 Nov 2011
Walter Sisulu University	16 Nov 2011
Higher Education South Africa (HESA)	16 Nov 2011
Education Deans Forum	29 Nov 2011
Cape Peninsula University of Technology	29 Nov 2011

University of Fort Hare	29 Nov 2011
University of Johannesburg	29 Nov 2011
University of Limpopo	29 Nov 2011
Mangosuthu University of Technology	29 Nov 2011
North West University	29 Nov 2011
Tshwane University of Technology	29 Nov 2011
Vaal University of Technology	29 Nov 2011
University of the Western Cape	29 Nov 2011
University of the Witwatersrand	29 Nov 2011

Presentations by labour and student organisations

Organisation	**Date**
Democratic Alliance Youth (DA Youth)	25 July (Jul) 2012
National Tertiary Education Union (NTEU)	25 Jul 2012
Pan Africanist Student Movement of Azania (PASMA)	25 Jul 2012
South African Democratic Students Movement (SADESMO)	25 Jul 2012
South African Parastatal and Tertiary Institutions Union (SAPTU)	25 Jul 2012
South African Students Congress (SASCO)	25 Jul 2012
Freedom Front Youth (FF Youth)	25 Jul 2012
Congress of the People Student Movement (COPESM)	26 Sept 2012
South African Union of Students (SAUS)	26 Sept 2012
National Education and Allied Workers' Union	15 Nov 2012

Other presentations by stakeholders to the Committee

Organisation	**Date**
Department of Science and Technology (DST)/National Research Foundation (NRF)	8 August (Aug) 2012
Prof. Johann Mouton, Director of the Centre for Research on Evaluation, Science and Technology (CREST)	8 Aug 2012
Financial and Fiscal Commission (FFC)	26 Sept 2012