

A Profile of Higher Education in Southern Africa

VOLUME 1: A REGIONAL PERSPECTIVE

Executive editor: Piyushi Kotecha
Authors: Merridy Wilson-Strydom and Samuel N Fongwa

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A PROFILE OF HIGHER EDUCATION IN SOUTHERN AFRICA

Volume 1: A Regional Perspective

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SARUA is a not-for-profit leadership association of the heads of the public universities in the 15 countries of the SADC region. Its mission is to promote, strengthen and increase higher education, research and innovation through expanded inter-institutional collaboration and capacity-building initiatives throughout the region. It promotes universities as major contributors towards building knowledge economies, national and regional socio-economic and cultural development, and for the eradication of poverty.

The authors are responsible for the choice and the presentation of the facts contained in this document and for the opinions expressed therein, which are not necessarily those of SARUA and do not make any commitment for the Association.

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Foreword

This publication makes a significant contribution to the knowledge base on higher education in the SADC region and is most timeous. Its value is multi-fold.

In June 2012, SADC ministers of higher education endorsed the development of a regional plan of action. In the wake of that endorsement, this publication provides vital information for decision-makers at inter-governmental, national and institutional levels that can be used for purposes of analysis, planning and advocacy.

This volume documents the latest data that SARUA has gathered on public higher education institutions in the SADC region, and contains some exploratory information on private higher education institutions. In so doing, it builds on SARUA's first initiative published in 2008, *Towards a Common Future: Higher Education in the SADC Region* (Kotecha 2008c).

The study provides wide-ranging data on all 15 SADC countries, making it possible to track national outputs and draw cross-national comparisons with a view to forming a regional profile for higher education. Growth of higher education provision is evidenced, the pressing demand for access is documented, and important challenges pertaining to planning, funding and innovation are foregrounded. Given expressed needs in the sector, it is also clear that future in-depth research has to be directed at higher education supply, capacity and demand in Southern Africa. In particular, it will be necessary to examine how the growing international trend towards open source learning can help higher education systems and institutions in the SADC region to transcend current limitations of infrastructural development. Given that infrastructural development will be finite in the context of both financial and human resource limitations, modes of delivery will in all likelihood require a mix of public and private provision. Investment in research is an important policy challenge for growing and renewing the academy as well as for enhancing social and economic innovation.

This publication eloquently articulates the complex interplay of challenges at the national and regional nexus. Strong national systems of higher education provide the necessary anchors for regional development, but complementary supra-national drivers can stimulate social and economic development. Whilst the promise of regional integration holds immense possibilities for growing, strengthening, articulating and differentiating the higher education sector, the study identifies many gaps and raises numerous issues, some of which signify dissonance with regional development objectives.

To date, the lack of political will to mobilise the necessary resources and to plan ongoing regional, inter-governmental dialogue, the lack of a systemic regional database, and the lack of involvement and ownership of the SADC protocol among higher education leadership and institutions, indicates that fragmentation, duplication and structural post-colonial divides are major and persistent constraints. The lack of appropriate drivers, enabling legislation, incentives and mechanisms prevent the realisation of regional co-operation and collaboration as an attainable goal in the context of the laudable vision of the Southern African Development Community (SADC).

The June 2012 extraordinary meeting of SADC Ministers of Higher Education and Training is a very encouraging development. Equally, SARUA's contribution towards building a knowledge base

on higher education in the region has been widely acknowledged and the response to its Southern African leadership dialogues on the revitalisation of the sector has been most encouraging, in addition to the identification of governance, management and leadership challenges. We now have the necessary basic platforms for focused, targeted dialogues and interaction between the state and the higher education sector across the region. Taking cognisance of the austerity measures in the North, and the aggressive search worldwide for knowledge personnel and producers, it is imperative that African governments take a lead in making discernible investments in higher education. The begging-bowl syndrome of approaching Northern donors exclusively is no longer a sustainable methodology.

In a study of this magnitude there are many people to thank and acknowledge.

Sincere thanks to Merridy Wilson-Strydom and Samuel N Fongwa for their excellent research leadership role in steering this study. Their expertise, commitment and stewardship in establishing a regional team of researchers was integral to conducting this study.

A dynamic and dedicated team of researchers participated in this study in various ways. Thanks go to:

- Prof. Leapetswe Malete and Mr Kagiso Kobedi at the University of Botswana, and Dr Godfrey Hampwaye and Dr Liberty Mweemba at the University of Zambia, who collected the data in Botswana and Zambia respectively and prepared the country chapters for these two countries (see Volume 2).
- The research team based at the University of the Free State: Beate Gadinger, Nteboheng Mahlaha, Israel Mawoyo and Lifutso Ts'ephe.
- The translators and research assistants who helped the team communicate with francophone and lusophone countries: Maud Macinkowsky, Evelyn Siyoko, Jorge Costa Mendes de Carvalho and Antonio Fariaf Fundiz.
- Dr Lis Lange (Senior Director: DIRAP, University of the Free State, South Africa) for her guidance and encouragement throughout the research process.

My thanks are also extended to the vice-chancellors and staff with whom the research team worked at the participating universities. Your efforts to gather the comprehensive set of data asked of you is most appreciated. Many thanks also go to the contact people with whom we worked in the ministries of education. Without the support of all these contact people at the universities and ministries this study would not have been possible.

Piyushi Kotecha
CEO: SARUA
November 2012



Researchers and authors

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Nteboheng Mahlaha is from Lesotho and is currently a research assistant at DIRAP. In 2011 she became part of the University of Free State (UFS) SARUA project team, while completing her BA honours in criminology. She holds an undergraduate degree in human and societal dynamics obtained at the UFS in 2010. Ms Mahlaha has been involved as a tutor with the New Academic Tutorial Programme and has held a leadership position at the UFS.

Leapetswe Malete is the director of the Office of International Education and Partnerships at the University of Botswana. Prof. Malete holds a masters and PhD in sport psychology with a cognate in developmental psychology from Michigan State University in the United States. He obtained a bachelor's degree in humanities and a postgraduate diploma in education from the University of Botswana before joining the University of Botswana in 1994 as a staff development fellow teaching sport psychology and research methods. He has previously served as a visiting research fellow at the University of the West Indies, Mona Campus in Jamaica. Prof. Malete is an author or co-author of numerous peer-reviewed publications, and has presented at many international conferences on sport psychology and international higher education. His research interests are in psycho-social correlates of the involvement of youth in sport and physical activity, with a specific emphasis on achievement goal orientations, socio-environmental influences, and self-confidence or efficacy beliefs. He has received a number of international research grants and served as either co-investigator or project leader in multi-disciplinary research teams.

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Lifutso Ts'ephe is from Lesotho and is currently reading for a masters degree in public management at the University of the Free State. She holds a bachelors degree from the National University of Lesotho, majoring in development studies and sociology, and an honours degree in sociology from the UFS. She worked as a research assistant in DIRAP and is currently engaged in a research project on black women's narratives at UFS.

Merridy Wilson-Strydom is the assistant director of Monitoring and Institutional Research DIRAP. She completed her bachelors and honours degrees in social science at the University of KwaZulu-Natal (Pietermaritzburg), and was awarded a Rhodes scholarship to read for an MPhil in development studies at Oxford University, which she completed in 2001. Ms Wilson-Strydom has been working in the areas of education and higher education for nearly fifteen years, initially at the University of the Witwatersrand, then as an education research consultant, and now in the field of institutional research at the University of the Free State. She has published in several national and international journals and presented her work at conferences. Ms Wilson-Strydom was the lead researcher and project manager of SARUA's first regional higher education profiling study, published in 2008, and has played this role again in the current study. Her research interests include higher education transformation, theories of social justice and their application to higher education, access, and institutional research more broadly.



Acronyms

AAU	Association of African Universities
ADEA	Association for the Development of Education in Africa
AIDS	acquired immuno-deficiency syndrome
ASSAF	Academy of Science of South Africa
AU	African Union
CATS	credit accumulation and transfer systems
CEO	chief executive officer
CHET	Centre for Higher Education Transformation
DFID	Department for International Development (UK)
DHET	Department of Higher Education and Training (SA)
DIRAP	Directorate for Institutional Research and Academic Planning (University of the Free State)
DQAF	data quality assessment framework
DRC	Democratic Republic of the Congo
EMIS	education management information system
FET	further education and training
FTE	full-time equivalent
GDP	gross domestic product
HDI	human development index
HEMIS	higher education management information system
HIV	human immuno-deficiency virus
ICTs	information and communications technologies
ISI	Institute for Scientific Information
MoE	Ministry of Education
NSFAS	National Student Financial Aid Scheme (SA)
OECD	Organisation for Economic Co-operation and Development
RISDP	Regional Indicative Strategic Development Plan
SA	South Africa
SADC	Southern African Development Community
SADCQF	SADC Qualifications Framework
SARUA	Southern African Regional Universities Association

SSA	sub-Saharan Africa
TCCA	Technical Committee on Certification and Accreditation (SADC)
TEVETA	Technical Education, Vocational and Entrepreneurial Training Authority (Zimbabwe)
UCT	University of Cape Town
UNISA	University of South Africa (distance learning institution)
UoM	University of Mauritius
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UWN	University World News
WGEMPS	ADEA Working Group on Education Management and Policy Support

Introduction

Perhaps more than at any time in history, Africa today must confront this potent fact: that the relation between the African university and African society is absolutely dialectical; that is, the fate of each rests in the hands of the other (Lulat 2005:439).

The importance of higher education as a driver of development, particularly in the context of the global knowledge economy, is widely recognised. This is no less the case in Africa, and in the fifteen countries making up the Southern African Development Community (SADC).¹ As the quotation at the outset of this review emphasises, the role of higher education in development extends beyond economic development, playing a pivotal role in the building of democratic societies (see also Gumede 2012). Consider the mission statement of SADC:

to promote sustainable and equitable economic growth and socio-economic development through efficient productive systems, deeper co-operation and integration, good governance, and durable peace and security, so that the region emerges as a competitive and effective player in international relations and the world economy.²

Delivering on this mission requires, amongst other things, effective, efficient and high-quality higher education systems in the region that will build the human capital base needed for economic development, as well as an informed citizenry that underpins good governance, peace and security (Kotecha 2012). The importance of higher education is increasingly being recognised, perhaps most pertinently of late in the extraordinary meeting of SADC Ministers of Higher Education and Training that took place in Johannesburg in June 2012 (South African Government 2012). A total of 12 of the 15 SADC countries were represented at the meeting, the objective of which was to begin to develop a higher education and training plan for the region, and to constitute a technical committee with responsibility for implementing the plan in accordance with the SADC Protocol on Education and Training.

For SADC countries and the region more broadly to develop such a plan and to meaningfully focus on building the higher education sector there is a need for accurate and up-to-date data and information about the status and profile of higher education nationally and regionally. The lack of quality data (and in the context of this review, higher education data specifically) in the SADC region has been well documented and was highlighted during the first profiling study conducted by SARUA between late 2006 and 2008 (Butcher et al. 2008, Hahn 2005, SADC 2001, Umlilio we Mfundo 2007, UNESCO 2010). The importance of building data collection, analysis and reporting systems is

1 The 15 SADC member states are Angola, Botswana, DRC, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

2 www.sadc.int/english/about-sadc/

recognised and integrated into regional strategy and planning processes, including the recent extraordinary meeting discussed above. The SADC Regional Indicative Strategic Development Plan (RISDP) calls for a system of harmonised statistics and an integrated regional database of key statistical information across sectors by 2015 (SADC 2001). Similarly, the more recently released capacity-building framework for education management information systems (EMIS) also highlights the critical role of data for African governments. The strategy document states that:

African governments, among other developing regions and development partners have committed themselves to management for development results. This 'results based management' involves focusing on performance and outcomes. The results based management approach is data intensive and predicated on the notion that there is both the capacity to demand and effectively use statistics for policy analysis and design (statistical capacity) and the national capacity to produce better statistics on a sustained basis, on a scale and timeframe relevant to policy makers (statistical supply) (SADC 2009:14).

Initiatives are underway in the SADC region to improve education data, as well as data for other sectors, and a set of education indicators have been developed for SADC to monitor the Regional Implementation Plan on Education and Training (2007-2015) (ADEA WGEMPS 2009, ADEA WGEMPS 2010). An assessment of the current state of EMIS in the region was commissioned by the SADC EMIS Technical Committee. The study, done by the ADEA Working Group on Education Management and Policy Support, was based on questionnaire data completed by the ministries of education in 14 SADC countries and informed the development of the Regional Capacity Building Strategy for Education Management Information Systems in SADC (SADC 2008, SADC 2009). During 2010 the UNESCO Regional Bureau for Education in Africa published the results of research done over the course of 2008 and 2009 with seven SADC countries, with the aim of reviewing the quality of education data in each country (UNESCO 2010). Two elements of quality were considered: (1) the quality of data collection, and (2) the quality of the analysis and dissemination of statistics. The UNESCO study underscored the diversity in education data availability and quality in the region, emphasising the need for a comprehensive database starting in the SADC region and across the continent.

Building on SARUA's pioneering work in the area of higher education profiling across SADC, this review presents an updated and more complete profile of public higher education in the region. In addition to the snapshot profile picture, the review also begins to present longitudinal data which provides an initial indication of the development trajectory of higher education in the region over the past five years. While SARUA's previous profiling work located the data firmly within an analysis of the role of higher education in regional development, this review, in addition to presenting an updated profile of higher education, draws specific attention to data issues and makes recommendations regarding how the critically important project of gathering regional higher education data might be fostered.

Following an explanation of the research methodology and limitations of the study, a review of pertinent literature is provided to set the scene against which the profiling data presented in Chapter 4 can be understood and interpreted. A detailed profile of higher education in the SADC region is presented, including some longitudinal trends, comparing the data from 2006 with the 2010 data collected for this study. A detailed reflection on the challenges and the importance of collecting higher education data in the SADC region is presented, together with methodological recommendations for future studies.

2

Methodology

The objectives of this study were six-fold:

1. to further refine and develop SARUA's higher education profiling instruments for universities and for ministries of education;
2. to update the higher education profiling information for the SADC region;
3. to begin to compile longitudinal data on higher education in the SADC region;
4. to prepare profiles of public higher education for each of the SADC countries;
5. to identify researchers working on higher education in the region; and
6. to build the capacity of young SADC researchers.

Objectives 1, 2, 3 and 5 are covered in Volume 1 (Regional Perspective), while Objective 4 is the focus of Volume 2 (National Perspectives) in which a profile of higher education in each of the fifteen SADC countries is presented. Objective 6 was cross-cutting.

Careful attention was paid to the research design and methodology of the study, building on a detailed reflective review of the methodological lessons learnt during SARUA's first profiling study (Wilson-Strydom 2011). While there have been other studies on higher education in Africa that focus on the collection of institutional data³, no other studies apart from SARUA's work in this area have sought to profile comprehensively regional higher education with the population of all universities in the region. As such, this work is breaking new ground in understanding public higher education in the SADC region. That notwithstanding, there are various limitations that bear mentioning. These will be taken up later in this section, following a discussion of the research procedure followed.

The study was led by researchers based at the Directorate for Institutional Research and Academic Planning (DIRAP) at the University of the Free State in South Africa. Two senior researchers each were appointed in Botswana and Zambia, and these researchers gathered the data and prepared the country reports for these two countries. For the remaining countries, a research team was convened at the University of the Free State. In meeting Objective 6 of the study, the research team in South Africa consisted of a South African research leader and emerging researchers of various nationalities, including Basotho, Zimbabwean and Cameroonian. In addition to the core research team, a French national was appointed to assist with communication with universities and ministries in francophone countries, and an Angolan national to lead communication with universities and ministries in lusophone countries. The emerging researchers are all postgraduate students.

³ For example, see the work done by CHET on cross-national performance indicators for African higher education: www.chet.org.za/books/cross-national-performance-indicators.

Summary of research procedure

This study surveyed public universities in all 15 SADC countries and also attempted to map the prevalence of private higher education in the region. The ministries of education in each country were approached to provide policy information as well as to respond to a series of questions about higher education set out in the study questionnaire. The public universities were approached individually to provide a comprehensive set of institutional data. This was not possible for private institutions given the lack of information currently available about the scope of the sector.

The primary purpose of the study was to update the profiling data focused on public universities in the region that was published by SARUA in 2008. The secondary purpose was to obtain information about the numbers of private higher education institutions currently operating in the region and to lay the basis for future research in this area. Where information about private higher education was provided by participating ministries, this has been included in the country chapters presented in Volume 2. However, the data collected through the mapping of private higher education was not sufficient for a meaningful regional analysis at this stage.

The following steps were followed in the collection of data:

1. The university and ministry of education questionnaires used in SARUA's first study were reviewed and updated as needed. Care was taken to ensure that the revised versions would still allow for the collection of longitudinal data. Questionnaires were translated into French and Portuguese and all communication was in English, French or Portuguese depending on the countries in question.
2. A letter from the SARUA CEO informing the ministry responsible for higher education in each of the 15 countries was prepared and sent to each ministry, together with a statement of support for the study that the ministry was asked to consider signing. Signed statements of support were received from eight of the countries.
3. SARUA provided a list of 72 public universities in the region to the research team and letters from the SARUA CEO were sent to all vice-chancellors informing them of the study and requesting their support. Where statements of support had been provided by ministries, these were attached to the letter.
4. Approximately two weeks later the questionnaires, with accompanying explanatory letter, were sent out to all 72 universities and the ministries of education. No questionnaire was sent to the ministry in South Africa because all the information asked in the ministry questionnaire could be sourced from national policy documents.
5. An extensive follow-up effort via email and telephone was carried out over a period of about nine months. As was documented in the previous SARUA study, many challenges were encountered with respect to finding accurate contact details for the appropriate people within ministries and universities, and often several emails and telephone calls were needed to establish the correct contact person. Where the research team experienced difficulties in receiving responses, additional follow-up letters were sent out by SARUA to encourage response.
6. During the course of data collection, it emerged that Angola has six public universities and not one as originally indicated on the initial list, and that the DRC in fact has 36 public universities and not five as was originally thought. At a fairly late stage in the study, these additional universities were included in the research and the relevant letters and questionnaires sent out. The same follow-up procedure was followed, although the amount of time available was limited due to the need to conclude the study. See Table 1 for a summary of the responses received per country.
7. Whilst data collection and follow-up was in process, the research team conducted a comprehensive literature review (Fongwa and Wilson-Strydom 2012) as well as a review of the websites of the ministries of education and the universities. This website review included the collection of data on the vision and mission statement of the public universities as well as relevant policy documents and other information. This broader source of secondary data informed the writing of the country chapters in Volume 2 as well as this regional review.
8. Data obtained from the ministries and the universities were captured in a spreadsheet which

included automated verification calculations that alerted the research team to data points that were inaccurate or needed further explanation or verification. Verification requests were sent back to the universities, mostly via email and sometimes telephonically. In some cases universities responded with corrected data, but often no further data were provided. Where data appear inconsistent and could not be verified, specific explanatory notes are included in the analysis presented.

Table 1 Summary of responses received per country

Country	Number of public universities	Number of university responses received	MoE response received?	Notes
Angola	6	1	No	At the outset of the study only one public university was included. An additional five were identified during the research and questionnaires were sent to them towards the end of the study. No additional responses were received.
Botswana	2	2	Yes	
DRC	36	6	Yes	There were originally only five universities included in the study, as per the list provided by SARUA. However, based on the response of the Ministry of Education, it was discovered that there are 36 public universities in the DRC. Questionnaires were then sent to all of the additional universities. Three responses came in from the original five universities targeted and three responses came in from the additional 31 universities included.
Lesotho	1	1	Yes	
Madagascar	6	4	No	
Malawi	2	1	Yes	The university that did not submit a response did provide data in the SARUA 2008 study. This data have been incorporated into this analysis.
Mauritius	2	2	Yes	
Mozambique	5	3	No	
Namibia	2	2	Yes	
Seychelles	1	0	Yes	The University of Seychelles is a very new university. As such, it was not appropriate for the university to provide data for this study. However, the ministry response was comprehensive and provided a useful overview of higher education in the country.
South Africa	23	12	Yes (policy)	Although only 12 universities submitted responses, HEMIS data for students and staff were available and thus, in most instances, data for all 23 universities are presented in this review.
Swaziland	1	1	Yes	None
Tanzania	9	8	Yes	Only one university did not respond, the Open University of Tanzania. This university did provide a response in the previous study and the data have been incorporated in the analysis presented in this review.
Zambia	3	3	Yes	
Zimbabwe	9	8	Yes	Only one university did not provide a response. Unfortunately this university also did not respond in the previous study and thus no data are available.
Total	108	54 (excluding SA HEMIS data) or 65 (including SA HEMIS data)	12 ministry responses	Ministry response rate is 80%. University response rate is 50% (60% including HEMIS data). If one considers only the 72 universities included in the original list provided by SARUA, the response rate is 75%. These response rates exclude the university data from the previous study that were integrated with the current data.

Limitations

As noted above, despite the contributions that this profiling work makes towards a regional understanding of higher education, there are some important limitations that need to be considered when interpreting the profile data.

The fact that this profiling work includes all the public universities in the region is a key strength of the study, since data at this breadth are not readily available. However, this extensive university coverage is also a limitation since the wide scope of working with 108 universities limits the quality of follow-up and verification of the data collected that would be ideal, and which would be possible when working with a sample of universities or with a much larger research budget. As already discussed, it was not possible to appoint in-country research teams in all the SADC countries. Ideally, in-country research teams would be in a position to visit the universities in the country and verify the data provided by each institution. This level of detail is not possible in the context of a study conducted by a small organisation such as SARUA. This should be borne in mind by the SADC Technical Committee on Higher Education when planning for ongoing regional data-gathering exercises. Furthermore, given the many challenges related to data availability, accuracy and timeliness, it would have been ideal if the study could have included a greater element of capacity-building in the areas of institutional research and national higher education statistics.

As shown in the profile (and also discussed briefly in the literature review section below), the private higher education sector is growing tremendously in the region. This is due to the high levels of demand for university places that cannot be met by the public sector. However, little is known about where private universities are functioning, the programmes on offer and the quality thereof. Thus SARUA used this opportunity to conduct exploratory research into private higher education. Ministries of education in this study were asked to provide the number of private institutions operating in their countries, a list of the names of private institutions, as well as an estimation of the proportion of students enrolled in private institutions. Some countries were able to provide relatively comprehensive data in this regard, but others still have sketchy understandings of private provision.

In the current study universities were asked to provide data for the 2010 academic year. In most instances data submitted referred to 2010, but there were some examples where universities did not have up-to-date information available and hence sent through data from previous years. In addition, as noted above, where universities did not submit a response for this study, but did submit data for the 2008 study, the data from the earlier study have been incorporated to ensure as comprehensive a profile as possible. As a result, the higher education profile presented in Chapter 4 should be seen as the closest possible estimate of data for the 2010 academic year.

A final limitation concerns the data on private higher education provision in the SADC region. As shown in the profile (and also discussed briefly in the literature review section), the role of private universities is becoming increasingly important and needs to be better understood. SARUA has conducted some exploratory work in this regard (Pillay 2011), but there are still many gaps in our understanding of private higher education. It was beyond the scope of this study to include private higher education institutions. Thus, when the review refers to higher education in the SADC region, this is limited to public higher education.

In Chapter 3 a brief literature review is presented in order to situate the profiling data presented in Chapter 4 within the larger regional, continental and global contexts.

Challenges and opportunities facing higher education in the SADC region

A review of the literature

Southern African higher education in a global knowledge economy

In contemporary development discourse, knowledge has become one of the main resources for the global economy and learning has become critical to the process of innovation and production (Florida 1995). Universities and higher education institutions have thus assumed a more central role in development planning. In fulfilling this role, higher education has witnessed significant shifts in its planning, governance and the types of knowledge outputs coming from the university. These shifts include the massification of higher education, a shift from state control to state supervision, emphasis on 'mode 2' knowledge production, an increase in the quantity and quality of knowledge outputs, as well as the ability to transfer and apply knowledge through innovative activities (Gibbons et al. 1994, Trow 2005). Developed economies, emerging regions and economies in transition are increasingly seeking to align development priorities to higher education, knowledge production and training policies (OECD 2001).

Under the influence of knowledge in the production process, new concepts, notions and approaches to economic growth and development have evolved. Some of these include shifts from notions such as comparative advantage to a constructed advantage based on the ability to innovate and transfer knowledge between sectors (Cooke and Leydesdorff 2006, Kruss 2012). In this context, we need to ask how SADC universities might work towards constructing advantage for the region. Interesting approaches such as 'learning regions' are advocated to address economic growth in weakening industrial clusters (Hassink 2005). A 'new' form of capitalism has been identified – knowledge capitalism – based on the ability of an economy to produce and absorb new knowledge and technologies for economic growth (Burton-Jones 1999). Importantly, it has been argued that a common denominator in all these shifts is the role of higher education institutions and universities in being able to produce knowledge and knowledge workers capable of sustaining and advancing these new shifts.

Faced by some of the above-mentioned global shifts and more, education in general and higher education in particular stands at a crossroads in the African context. Major development agencies, regional organisations and national states are placing new expectations on higher education institutions, demanding new responses in their three-fold functions (teaching, research and community engagement) (Bloom et al. 2006). To ensure relevance and sustainability of these responses, higher education on the continent needs to be revitalised. At a regional level, SADC reflects a community which has realised the crucial role that higher education must play in development and is seeking more sustained engagement with the university, forging new ways through which higher education in the region can be revamped to meet pressing national, regional

and continental needs. Under the auspices of SADC and various research organisations, there has been a growing body of studies aimed at increasing knowledge on the revitalisation of higher education in the region (for example, Hahn 2005, Nzimande 2011, SARUA 2009). A strategic move in support of regionalisation is the enactment of the SADC Protocol on Education and Training (1997).

In this revitalising effort, a holistic approach to the issues affecting higher education at both practical and policy levels (regarding inputs and consequent outputs) must be adopted. This entails bringing together all relevant stakeholders in the higher education system. A review of recent research reports on revitalising higher education in Africa has primarily focused on redressing the previously skewed higher education systems in Africa in general and SADC in particular. This has focused on issues related to access, quality, equity and funding, among others (Kotecha 2008a, AAU 2004, Materu 2007). The studies also identify a host of challenges faced by African higher education. These challenges also affect the Southern African region and have been described as follows:

The challenges faced by Education and Training in the sub-region are largely common to all countries. These are access, equity, quality, efficiency, relevance and democracy in their educational and training policies (SADC 2007a).

It is thus important to highlight and discuss some of the major challenges facing higher education in the region. Drawing on the detailed reviews of these challenges that have already been done by other researchers (Sawyers 2004, Assié-Lumumba 2006, SADC 2007a, and others), this section briefly highlights the key manifestations of these challenges.

Political instability and governance challenges

Many countries in sub-Saharan Africa are, or have recently been, plagued by various forms of poor governance, or are recovering from one form of political instability or another. Compounded by the crisis of structural adjustment programmes (SAPs), many governments have found themselves on the back foot in terms of economic and social development objectives. In most situations, these have led to political, social and economic unrest. Vivid examples from the SADC region include the military conflict of Angola which ended in 2002, the coup d'état in Madagascar in 2009 (Ploch 2011), the turbulent political situation and economic meltdown in Zimbabwe in the late 1990s and 2000s, and the crisis of the Democratic Republic of the Congo (DRC) in the 1990s and early 2000s. Sayed et al. (2008) observed that low enrolment figures in Angola, Mozambique and the DRC 'are a result of protracted civil wars that had a negative effect on the education sector'. The negative impacts of the socio-political and economic context on higher education in Zimbabwe have been documented by SARUA (SARUA 2010). Socio-political conflicts have had direct and indirect impacts on the state of higher education in the region. These impacts manifest themselves in funding shortages, breaks in academic semesters, destruction of infrastructure, the exodus of academics, and most often in a strong censorship on the freedom of scholarship produced at national universities (Sall 2002).

Makgoba (2003) also pointed out that higher education systems throughout the world are products of the society surrounding them (in Katjavivi 2005:2). This was closely observed in South Africa, where the political governance structure during the apartheid regime was strongly reflected in the university system and significantly hampered the production of knowledge and the distribution of benefits (Bunting 2002). In his review, Bunting highlights the fact that the higher education system during the apartheid years was perceived by the then government as a 'creature of the state' and was used as a state agency to enforce its political ideologies at the time. 'This dispensation was shaped in line with that government's view on the status of public higher education institutions' (2002:37).

The political legacy of most African states continues to loom over higher education and university management. Following the growth and development of African universities in the post-colonial years, the turn of the 21st century has witnessed a higher education system plagued by problems at new heights. While new perceptions have emerged internationally about the importance of higher education in development policy, the higher education system in the SADC region has been

characterised by considerable neglect (Yusuf et al. 2008). A major concern for education and higher education in Africa is the inherited notion on the part of governments, students and even some academics that higher education is an end in itself. This colonial heritage manifested itself in the fact that all university students in the post-colonial decades were guaranteed a place in the civil service or some government bureaucracy (Ajayi et al. 1996:74-75). Enshrined in the elitist higher education system at the time, and coupled with the limited number of universities and places available for students, those who had the opportunity to access higher education were socialised as elites and ensured automatic employment in senior administrative positions in the public service. It was against this background that the World Bank and IMF conducted studies on rates of returns on education and came to a rushed conclusion that higher education in Africa was more of a private good than a public good – that it ensured more personal economic returns than public benefits. This later resulted in cuts in higher education funding as it was considered more of a luxury than a necessity for Africa's development (Brock-Utne 2000).

Limited focus on science and technology

As a result of the fact that universities were established with an inclination towards the social sciences (including the arts, law and languages) and comparatively little emphasis on natural sciences, engineering and technology (Aina 1994:9, Saint 1992:1-2), limited importance was attributed to knowledge for development. Mwapachu (2010) indicates only 28 per cent of students in African universities are enrolled in science and technology programmes (21 per cent in SADC). There is a need for a change in this trend, a need for a rethink of policies and the value attributed to knowledge production and application in the context of the knowledge economy. There is also a need for new approaches to teaching, learning, research, training and experimenting, aimed at producing new forms of outputs able to adapt in the current global economy. The need for the revitalisation of education (and higher education in particular) in the SADC region has already been acknowledged in many spheres. Edigheji (2009) in a recent SARUA publication argues that universities need to develop academic programmes aimed at providing students with critical thinking skills and the competencies for planning, designing and inventing new products and services, so as to build the human capital base.

An argument for increased focus on science and technology in the region should not be seen as a concurrent argument against investment in the humanities and social sciences. Indeed, several authors have argued for the critical importance of the humanities in building democratic societies (for some examples see Giroux 2002, Nussbaum 2010, Robeyns 2006, Tikly and Barrett 2011, Walker 2009). Instead, the argument is one of building science and technology together with strong humanities and social science offerings that are contextually relevant and so contribute to national and regional development in a host of ways, not least through producing citizens who can think critically, show empathy and engage in public debate from knowledgeable positions.

Access and demand for higher education

After more than half a century of independence in most sub-Saharan African (SSA) states, access to higher education remains firmly an option only for the elite. While the global percentage of the age cohort enrolled at tertiary institutions has increased from 19 per cent in 2000 to 26 per cent in 2007, the proportion of sub-Saharan African school leavers gaining access to university education currently stands at about 5 per cent (World Bank 2009, UNESCO 2009). In comparison, the tertiary enrolment rate of OECD countries is above 40 per cent. Although it can be argued that current figures are double the 1993 figures of 2.4 per cent, SSA lags significantly behind other developing regions such as Latin America and the Caribbean, which have a gross enrolment ratio of above 35 per cent.

While Mauritius has in recent years achieved the highest enrolment ratio of 17 per cent with 17 000 students in tertiary institutions, two countries have carried more than half of all enrolments in sub-Saharan Africa. These are South Africa and Nigeria with gross enrolment ratios of 15 per cent (753 000 students) and 10 per cent (more than 1.3 million students) respectively (MacGregor 2008). In the SADC context, South Africa accounts for the majority of university enrolments,

graduates and research outputs. Using Trow's (1973) well-known 'elite-mass-universal' framework for higher education access, sub-Saharan Africa falls below the 15 per cent threshold and hence is described as an elitist system. Of more significance to these figures is the theoretical meaning assigned to higher education by the society. Applying this analysis, higher education in SSA and SADC in particular reflects a system strongly rooted in meritocracy, focused on educating the elite and preparing for technological take-off in a world characterised by rapid social technological change. This elitist system significantly ignores aspects of equality for individuals and social groups, democratic justice and capability development which are fundamental in the transition to the mass and universal stages of the framework (Trow 1973:14). This could imply that, while higher education is being perceived as an instrument for economic and technological development, the social and human aspects of higher education training as well as its role in social transformation remains under-explored and requires targeted attention (Robeyns 2006).

While access remains a major challenge facing higher education in the sub-region, increasing grounds can be found for the argument that there is a significant demand for higher education which is not supported by enough available spaces in the institutions. At the start of the 2012 academic year, the situation was exposed in South Africa where a significant number of university applications were turned down due to limited space at the public universities. According to a *University World News* online publication of 13 January 2012, 'universities and diploma colleges have only 180 000 places for first-year students while [...] some 250 000 South Africans passed their final high school exams at a level that qualified them for admission to tertiary institutions'. The University of Johannesburg alone received over 85 000 applications for the 11 000 first-year places available (UWN 2012). A theoretical question is therefore to inquire into the agents and agencies responsible for providing proportionate access to the increasing demand. In a recent audit by Rhodes University on accommodation at national universities in South Africa, it was observed that 'only 30 per cent of the students who needed accommodation in fact had any provided by their universities at all'. The report further observes that 'throwing open the doors of learning without providing the minimum support required to ensure a reasonable chance of success is not only irresponsible, but also dehumanising and is negating the very intention of increasing access to higher education' (MacFarlane 2012). In Zimbabwe, Kariwo (2007) observes that an estimated 8 000 students who qualify to enter university do not get a chance to do so. While the Open University of Zimbabwe currently enrolls more than 24 000 students, there is still a high demand for places in the 12 Zimbabwe universities. Students not able to attain university places in Zimbabwe are forced to move to neighbouring countries like South Africa or travel abroad to further their studies.

In the broader theoretical discourse on access, the increasing demand for higher education and a corresponding lack of supply of places in institutions of higher learning has been perceived as an issue both of political governance and ideology (Ball 1990). At a political level, access to higher education in some countries in the region has been used as a political tool to ensure socio-political dominance, and universities have been created in regions based on political affiliations (Sall 2004). Succinctly put, 'state creation and support for public universities later turned out to be a mixed blessing. From being a symbol of independent statehood, the university became both an instrument and a site for patronage politics' (Ibid:182).

At the ideological level, the belief systems of policy-makers have hampered the proliferation of private higher education institutions in favour of public universities, and have affected the support of traditional universities to the detriment of other forms of tertiary education, including vocational education and training colleges and universities of technology (Varghese 2004). This has been clearly observed with the establishment of stringent compliance rules and requirements for the establishment of private institutions. The 1991 World Bank policies restricted enrolment growth in public higher education institutions to no more than three per cent per annum until 2017, and it was only after this was amended that policies for private higher education institutions were enacted. Hence policies for the creation of most private institutions in African states and the SADC region only came into being in the early to mid-1990s (Varghese 2004:12). However, there seems to be light at the end of the tunnel for private higher education. With increased market forces affecting higher education systems and less government funding available (and hence less state control), private higher education is increasingly gaining ground in the region. Salamon (1995) argues that 'the new private surge' should be seen in a larger context as a shift from state to private or mixed higher

education. These developments should produce higher education systems with more strategically differentiated institutions to ensure access for the maximum number of students. The SADC region, with the advocacy role of bodies such as SARUA, potentially positions itself at a strategic crossroads to enhance higher education access through private partnerships and collaboration between higher education institutions across the region. Better understanding of private higher education provision in the region is thus imperative.

Funding constraints

In order to increase access and ensure quality, there is a need for increased and sustained higher education funding. Knowledge output, to a large extent, also depends on the type of input into the knowledge production system. Unfortunately funding has remained a challenging issue in African higher education. Initial funding policy in most African economies was dominated by the tuition-free funding model of the 1960s and 1970s which was typical of most African governments. Arguments have been raised that, while this funding model did not disadvantage the poor, it also did not increase access sufficiently and subsequently became unsustainable (Oketch 2003, Johnstone 2004). Although higher education financing has been changing in all higher education systems across the globe, developing economies (and those in sub-Saharan Africa specifically) have been hard hit. While African governments in post-independence years provided a significant portion of the budget for higher education, the structural adjustment programmes of the 1980s, the economic crisis of the mid-1990s, and the more recent international debt crises have contributed to the degenerating financing condition in which higher education in Africa finds itself.

With the recent reiteration of the role of higher education in national economic development by international funding bodies and national governments, most countries in the SADC region find themselves in a dilemma of higher education funding (Johnstone 2004). Stringent national budgets and other pressing social needs such as health and basic education exert demands on national budgets, with the result that higher education generally receives a relatively small budget allocation as a percentage of national GDP. In trying to address the need for funding, most SADC countries have instituted cost-sharing policies. Namibia and Zimbabwe are among the countries with some form of cost-sharing funding policies for higher education, while Zambia and Tanzania have developed a dual-track system where students who do not pay tuition fees study alongside tuition fee-paying students. In countries such as South Africa and Namibia, all higher education students are fee paying, with loans to students from poor backgrounds by facilities such as the South African National Student Financial Aid Scheme (NSFAS). Similar loan schemes have been adopted in other countries such as Tanzania, Lesotho and the Higher Education Loan Board in Kenya to address the financial needs of poor students. Except for South Africa, however, most of these loan schemes have not had much success in recovering the funds, so most of these loans have been disguised scholarships or bursaries (Pillay 2008a).

Pillay (2008b) further observes that most countries in Africa and the SADC region (except South Africa and possibly Mauritius) do not have a higher education funding formula which informs government planning. Although this is changing (see Chapter 4), the lack of a funding formula exposes countries to external forces such as inflation, and indicates a lack of co-ordination in planning at national, system-wide and institutional levels. This has dire impacts on research funding, the sustainability of funding for long-term projects, and the ultimate contribution that higher education can make to national development. While African universities are increasingly benefiting from foreign donors, Cloete et al. (2011) in a recent study argue that there is a trend that, due to financial challenges, academic research is being compromised at most universities in the region through consultancy and contract research in a search for third-stream income. This third-stream income, as illustrated by Cloete et al. (2011), most often comes at the cost of the academic core and the knowledge production functions of the institutions. From an expansion perspective, Ishengoma (2010) observes that one of the limitations of donor funding as another source of third-stream income in Africa and elsewhere is that this source of funding tends to be fragmented or not synchronised sufficiently with national priorities, with the result that its impact on the holistic expansion of higher education is constrained. Working from a knowledge production perspective,

Cloete and his colleagues introduce the notion of 'projectisation' and contend that 'in the absence of a coordinated funding and incentive strategy from government, reliance on external funding increases which, in turn, can contribute to more fragmentation and "projectisation"' (Cloete et al. 2011:13). This, they argue, works to the detriment of the core business of the university, namely knowledge production.

Quality concerns

The need for better academic quality for higher education in Africa and the SADC region in the last decade has received increasing attention (Materu 2007, Mhlanga 2008). With more policies that aim to increase funding for higher education and access for the maximum number of students desiring to obtain higher education qualifications, a fundamental issue is the quality of student output, the kind of knowledge produced, and the efficiency in producing better academic throughput rates. As illustrated in a World Bank study:

One of the major problems of African education is not as most think – universality; rather it is quality which is the problem. Africa needs thinkers, scientists, researchers, real educators who can potentially contribute to societal development (Yeneayhu 2006).

Issues affecting academic quality manifest in diverse ways including, among others, poorly equipped libraries, poor academic and laboratory infrastructure, high staff:student ratios, demotivated staff, an ageing professoriate, overloaded academics who are increasingly immigrating to other regions for greener pastures, and often outdated curricula.

Another pronounced manifestation of the need for better academic quality is the lack of relevance demonstrated by most curricula as well as the graduates produced (Yizengaw 2008, SADC Protocol Review 2007). Based on previous studies and document reviews, the UNESCO/ADEA Task Force for Higher Education and Research in Africa propose that higher education institutions will need to be more locally relevant in the curricula offered and their delivery to the local context (UNESCO/ADEA 2009). The task force states that institutions should be 'supported to serve the priorities and needs of Africa's development through [a] socio-culturally relevant curriculum and curriculum delivery, particularly in the fields of Science and Technology' while at the national level, 'development plans should match graduate output with national human resource needs in order to minimise graduate unemployment'. Another important aspect in this argument is the importance of the social and cultural role of higher education curricula and mode of delivery. While emphasis is placed on the human capital and technology-building role of higher education, the human development role of the university must also be emphasised and reflected in the curriculum to ensure that higher education addresses the holistic needs of society (Assié-Lumumba 2006).

The generally poor level of the production of knowledge in the SADC region is compounded by the low quality and quantity of academic and research staff in the universities. Kotecha et al. (2011) observed in a SARUA study that 'only South Africa and Mauritius have a PhD qualification rate of above 0.3 PhDs/FTE/year; all the other countries have rates lower than 0.1 PhDs/FTE/year'. These findings in the SADC region were corroborated by Cloete et al. (2011:28) who conducted case studies in eight African countries and found that only South Africa (University of Cape Town) and Mauritius (University of Mauritius) had more than 40 per cent of their staff with PhD qualifications (UCT: 58 per cent and UoM: 45 per cent in 2007).

Due to the effects of poor remuneration and low infrastructure in research facilities as well as the brain drain, exacerbated by the effects of the HIV/AIDS pandemic, many of the region's academics have migrated to developed economies (Assié-Lumumba 2006). South Africa has also been a major destination for academics in the region, leaving many universities in other Southern African countries understaffed and underperforming. With barely a quarter of academics having a PhD qualification, the level of academic quality in universities in the region demands a rapid upgrade. This low proportion of academics with PhDs has a direct bearing on the rate of academic publication in the region. Publication data reveals that, while academics are expected to publish an average of 1 to 1.4 publications per full-time equivalent (FTE) staff member per year, which is considered as the South African standard, academics at flagship universities in Tanzania, Mauritius,

Mozambique and Botswana all have publication rates of less than 0.4 publications per FTE academic per year (Cloete et al. 2011). This figure is likely to be much lower if all the universities in these countries are considered. This trend could very well be a representation of other countries in the region and the continent as a whole. While attracting and retaining quality staff remains a big challenge, the regionalisation of higher education in the SADC region could enhance the broader quality of knowledge production through collaboration between universities and networks across countries in the region.

Access to and use of ICTs

Working within the current knowledge society discourse, the World Bank Institute's Knowledge for Development (K4D) programme has identified key factors that need to be in place as the basis from which the development of the knowledge society progresses (World Bank 2007a). Referred to as pillars for the knowledge economy⁴, they include an educated labour force, an effective innovation system, adequate information and communication technology (ICT) infrastructure, and a conducive business and governance framework (Chen et al. 2005, World Bank 2007b). The importance of investment in ICT is clear when considering these pillars, since education in contemporary society increasingly relies on some form of ICT application. Furthermore, the development of science and technology can be considered the rails on which innovation systems run (Butcher 2011). With the exception of South Africa and Mauritius, most universities in the region are seriously constrained in their use of ICT by a shortage of computer stations and a lack of access to affordable high-speed Internet connectivity. In a baseline study by SARUA on the challenges facing higher education in the region, it was observed that 'access to computers is still low – in 2007, on average four lecturers per computer, three administrative staff per computer, and 70 students per computer – and progress in developing research and education networks has been slow' (MacGregor 2009).

With traditional libraries now becoming a thing of the past and increasing dependence on online libraries and databases, higher education institutions in sub-Saharan Africa and the SADC region will urgently need to address the application of ICTs in the management of academic information services to enhance academic quality and knowledge output for a knowledge economy in the region. In a recent study in Mozambique by Zeininger (2009) there is evidence of very low ICT usage for academic purposes: 'though there is a massive increase in universities and higher education institutions in Mozambique, the majority of the new HEIs are not using ICT facilities for educational purposes'.

Regionalisation

With increased knowledge production and dissemination in the knowledge economy, there has been a significant integration of economic regions, surmounting space barriers. This integration of economic and even political regions has resulted in a significant decline of the nation state and has given rise to the 'evaluative state' to address issues of 'operational efficiency' (Neave 2009). In this new era, universities now find themselves faced with competition from other universities in an international context. As a result, universities are forced to meet new managerial, financing and knowledge production standards at an international level in a bid to link with international networks. In this new platform of knowledge production and standardisation, the national education system does not totally lose its role, but does see its influence greatly curbed (Byrkjeflot 2001). Regional systems and structures have emerged with direct implications for the delivery of higher education and the knowledge production process.

The notion of regionalisation is widely considered to provide a way forward for collaboration and harmonisation in the process of teaching, research and knowledge production within a regional framework. In this integration process, different higher education systems and national states agree to come together under a regional umbrella organisation and design a common higher

4 <http://go.worldbank.org/5WOSIRFA70>

education co-ordinating system, which facilitates co-operation through, for example, credit transfers between universities, recognition of academic qualifications, supporting student and staff inter-institutional mobility, minimising operational costs, and allowing for sharing of existing capacities and experiences between institutions and academics. This strengthens the weaker institutions while maximising the capacities of the stronger institutions for the broader good of the region and the individual national states (Munavu and Kithuka 2007).

The notion and practice of internationalisation and the subsequent regionalisation response has been witnessed across different regions. Typical examples include the Bologna process, the Erasmus Mundus programme in Europe, and other programmes in North and Latin America. There have also been some initiatives in the Asia and Pacific regions which highlight the rationale, process and implementation of regional integration and collaboration initiatives. These initiatives over time have been observed to support the execution of the three functions of higher education. While much success has been observed in the process of regionalisation in these areas, it must be noted that regional collaboration and partnerships between higher education institutions and systems can be more complex than described in the case studies. It thus remains important that key lessons as well as challenges be carefully identified and contextualised in the SADC region.

Collaboration, networks and co-operation with other regional higher education systems potentially hold numerous promises for Africa in general and the SADC region in particular. From a South African perspective, Jansen et al. (2008:390-391) capture five main reasons for internationalisation. These apply equally to other countries in the SADC region and thus provide more reasons for collaboration and partnerships. The first point identified by Jansen and his colleagues is the need to redress the effects of apartheid that distanced the country from its neighbours. While other countries in the region did not suffer the same effects as those under the apartheid system, the majority experienced civil war and various forms of political unrest. The second consideration is the need to pursue international norms and best practices for higher education systems. Thirdly, they identified the development of human resources, followed by the need to improve research and enhance knowledge production, and finally the importance of regional integration and development (Oyewole 2009).

However, the process of regionalisation of higher education faces challenges on many fronts. Among these impediments is the diversity and disparity of countries and higher education systems in the region (see the Appendix and Volume 2). The diversity of languages such as English, French and Portuguese, differences in credit and grading systems, different curricula, the quality and recognition of higher education institutions, limited financial resources, and different demonstrations of political will all pose significant challenges to the process of regional integration in higher education. While there is already significant diversity between countries, a closer look at higher education institutions within a single country reveals fragmentation and a lack of synergy between institutional objectives and national development objectives. Consequently, the importance ascribed to higher education at regional level may not be the same as at national level. This has negative implications for institutional and national commitment to the implementation of protocols between countries (Mogobe et al. 2009).

Another major challenge is the lack of data. There is a significant lack of systematically generated and centrally stored data available in a regional database. This is partly due to relatively weak data collection and accumulation processes in the region. While most countries lack the institutional and technical capacity to collect data consistently and on a sustained basis, some do not have the political will to do so as data are sometimes used for political ends. In order to develop appropriate regional policies and evaluate them over time, it is important to know what the status quo is. The successful implementation of the SADC protocol depends on the development and management of a consistent and centralised data collection system (see Chapter 5).

The lack of adequate financial and human resources has been identified as another major challenge facing the implementation of the SADC protocol and integration of higher education systems in the region. There are weak support structures at national and institutional levels. Most member states have not assigned designated offices and departments to partner with SADC officials (Hahn 2005, Ngwenya 2011). It is usually assumed that senior officials add the regionalisation agenda as new tasks to their already tight work schedules. Also, the quick, most often politically-motivated, shuffling of national and even of university leadership in most national governments

undermines the possibility for sustained engagement with a particular official on the process of regional integration. New officials come with new agendas and could hamper previously smooth working relationships. Mobility schemes require financial resources from national and institutional levels, which are most often not available (Ibid).

Hahn (2005) observes that inconsistent regional policies also present hindrances to regional integration. The Regional Indicative Strategy Development Plan (RISDP) was initiated with the aim of providing the SADC member states 'with a coherent and comprehensive development agenda on social and economic policies over the next fifteen years' (SADC 2004:7). Nevertheless, there is little coherence in its emphasis regarding human resource development policies in general and higher education and training in particular. In the RISDP, higher education is barely mentioned while social aspects (gender, AIDS, etc.) seem to get more attention. Issues relating to student and teacher programmes, the inclusion of HIV into the curriculum, and gender are covered without any reference to higher education (Hahn 2005:29). In dealing with priority intervention areas, the RISDP allocates a sub-chapter to science and technology, but higher education is not mentioned. This seems to overlook the fact that for science and technology to excel there is a need for a sound and high quality higher education system. Another area of policy inconsistency as observed by Hahn (2005) is the disjuncture between the SADC policy and national immigration policies relating to collaborative issues such as the processing of staff and student visas. In the South African context, it remains important to reconcile the policies of the Ministry of Home Affairs with the provisions of the SADC protocol relating to academic mobility in the region. The African Union's draft policy on the harmonisation of higher education refers to the importance of higher education in regional development (2007:3), but makes little explicit reference to the specific roles that higher education can play in this regard.

In their review of the SADC Protocol on Education and Training, Umlilo we Mfundo (2007) observes that most countries in the region have made limited efforts to incorporate the SADC protocol into their education and higher education policies. None of the five main documents informing education in the DRC makes mention of the SADC protocol, while in Angola the SADC protocol and the African Decade of Education are virtually unknown in the education sector. This supports Hahn's (2005) arguments that there is a significant lack of consistency across policies in the region, despite the aim of enhancing the regionalisation of higher education.

One of the major challenges in the internationalisation and regionalisation of higher education in Africa in general and the SADC region more specifically is the lack of standardised instruments which promote internationalisation activities. This is in the form of credit accumulation and transfer systems (CATS). The SADC Qualification Framework is expected to address some aspects of this issue (Hahn 2005).

The lack of ownership of the SADC protocol and the lack of a regionalisation champion can be attributed to top-level consultations at government level with little involvement of a wider range of stakeholders. Employers, quality assurance agencies, academics involved in university administration, and the wider society seem to have received little information and involvement in the design and implementation of the protocol. There is an obvious need for more sensitisation through a publicity campaign and the more active inclusion of stakeholders in the discourse. While SARUA can be seen as one potential champion in forging the regionalisation debate and implementing the protocol, there is a lack of dedicated funds to support this initiative (Hahn 2005). In trying to provide a reason behind the perceived lack of ownership as argued, Otaala (2002:10) suggests that the lack of publicity of the protocol and its objectives could be a major factor, arguing that 'there seems still to be quite a number of higher education managers and stakeholders that do not know about the protocol as they have not yet received copies'.

Emerging opportunities

The above sections have highlighted some of the challenges facing higher education in Africa and the SADC region in particular. However, embedded in these challenges are opportunities with the potential not only to build a strong regional body, but also to position higher education in SADC as a key driver of economic, social and human development. Even though it may not yet be championed and implemented to the extent that it should be, the fact that SADC members have committed to

the SADC Protocol on Education and Training is an important starting point and provides the basis from which higher education in the region can build. In particular, the protocol strengthens the regional significance of initiatives such as the extraordinary meeting of SADC Ministers in June 2012, which focused on higher education.

Another important aspect is the relatively strong economic growth being experienced by SADC countries compared to European countries and the United States. The newly discovered minerals in Zimbabwe, the oil boom in Angola, and the stable economies of Botswana, Mauritius and, to some extent, South Africa, are producing a conducive economic base off which higher education can play a greater role in both national and regional development.

Furthermore, good relationships at the level of inter-country migration within the SADC region are facilitating the mobility of staff and students, since only a few countries require visas for citizens to move within the region. This aspect of regionalisation could be enhanced further to expand and support regional collaboration and co-operation between higher education institutions and academics.

Conclusions

Higher education and universities are presented with changing dynamics in achieving their key functions as knowledge producers. With more emphasis on the knowledge economy and the need for lower-income countries to close the income gaps between themselves and the post-industrialised nations, knowledge has become a key factor in the production process. However, in trying to respond to knowledge needs, higher education institutions and universities are faced with diverse challenges. These challenges are particularly significant in the African context where higher education still struggles to redefine itself. Coupled with evidence of the forces of globalisation across all aspects of their economies, several African governments have not been able to break decisively with their colonial heritage. They also face other pressing societal needs. This has resulted in higher education systems being plagued by numerous challenges whilst simultaneously struggling to acquire much-needed financial and human resources in order to reposition themselves as a development force in the continent.

In the face of increasing forces of globalisation and the challenges facing individual higher education systems on the continent, as will be shown in later sections of this review, regionalisation and collaboration between higher education institutions in Africa, and the SADC region in particular, hold enormous potential for improving the quality of higher education and contributing to national and regional development. For this to be achieved there is a need for appropriate national and regional governance policies to support the implementation of the regional protocol. Ultimately, well-defined and carefully implemented regionalisation is expected to revitalise higher education and enable it to make the necessary contribution to the transformation of the region and to the imperatives of a knowledge society.

4

Profiling the SADC public higher education landscape

This section of the review presents a regional analysis of the data collected from SADC public universities and ministries of education (see Table 1 for response details). While Volume 2 of this collection presents the details of the analysis at national level, the focus here is on presenting a regional overview. This chapter begins with an overview of the size and shape of higher education in the region, considering the number of public and private universities, a profile of the staff and students at public universities, and the enrolment profile for the region. This is followed by a discussion of the data related to quality, broadly defined, and includes a review of quality assurance processes at national and institutional levels, as well as the provision of student support and infrastructural facilities. It then turns to the outputs of public higher education in the SADC region, with a focus on graduation trends, masters and doctoral graduates, and publication outputs. Unless otherwise stated, the data refer to public universities.

Size and shape of higher education in SADC

One of the challenges of profiling higher education in the region is that, at present, there is no complete and verified database of all the higher education institutions. The availability and accuracy of the data differ from country to country. This can be perceived on the one hand as a manifestation of a lack of adequate co-ordination at national and regional level, and on the other hand as a reflection of the fact that higher education in the region (and the continent) is still in a growth phase with new institutions being created to meet different demands.

Table 2 presents the information that was provided by ministries of education regarding the number of publicly funded universities, the number of publicly funded universities of technology, the number of privately funded universities and colleges, and other higher education institutions. Based on this data, there appear to be 109 public universities, 526 publicly funded technical universities and polytechnics, and 456 privately funded higher education institutions in the SADC region. These numbers are somewhat larger than those reported in SARUA's 2008 study, which drew on data for the 2006 academic year. The 2006 research identified 66 public universities, 114 publicly funded polytechnics, and 170 private higher education institutions (Butcher et al. 2008:71). While it might be that some of the universities identified in the present study were operating at the time of the previous study, but were not identified in the research, it seems reasonable to conclude that there has been some expansion of the regional higher education sector in the past five years.

Table 2 Number of higher education institutions per country

Country	Number of publicly-funded universities	Number of publicly-funded technical universities/colleges	Number of privately-funded, accredited universities and colleges	Other higher education institutions
Angola	6	No data	No data	
Botswana	2	23	7	
DRC	36	416	140	
Lesotho	1	3	9	
Madagascar	6	2	55	
Malawi	3	0	7	
Mauritius	11	0	55	
Mozambique	4	9	13	
Namibia	1	1	2	
Seychelles	1	0	0	
South Africa	17	6	118	50 (FET* colleges)
Swaziland	1	1	2	
Tanzania	8	11	22	
Zambia	3	43	32	239 (TEVETA)**
Zimbabwe	9	0	5	
Total	109	515	467	289

* Further education and training (FET) colleges

** Technical Education, Vocational and Entrepreneurial Training Authority (TEVETA)

Ministries of education were asked to indicate the proportion of the total student body enrolled in public universities. Nine ministries provided responses and the proportion ranged from a low of 49 per cent to a high of 80 per cent of students. The average across the nine countries was 64 per cent. Thus, although the number of private higher education institutions is growing, the majority of students in the region remain enrolled in the public higher education sector.

Public higher education in SADC continues to be dominated by contact provision. While contact students accounted for about 72 per cent of all enrolments in 2006, by 2010 the numbers provided by universities indicated that about 84 per cent of students are contact students. It should be noted that not all universities were able to provide a breakdown of their students by mode of instruction, so the totals shown in Table 3 are a little lower than in subsequent tables.

Table 3 Numbers of students by mode of instruction

Country	Number of contact students	Number of distance students	Number of full-time students	Number of part-time students
Angola	47 373	0	47 373	0
Botswana	14 180	505	11 566	2 614
DRC	65 375	0	62 142	0
Lesotho	12 212	0	No data	No data
Madagascar	45 360	50	45 183	177
Malawi	8 633	1 232	9 393	5 283
Mauritius	13 444	1 232	9 393	5 283
Mozambique	16 714	2 070	42 782	16 314
Namibia	21 664	5 365	10 921	7 780
Seychelles	No data	No data	No data	No data
South Africa	518 797	126 212	No data	No data
Swaziland	3 779	1 744	3 561	1 962
Tanzania	28 734	5 176	26 426	12 099
Zambia	18 477	5 948	17 734	1 207
Zimbabwe	18 755	11 604	28 878	2 789
Total	833 497 (84%)	161 138 (16%)	315 352	55 508

The challenge faced by universities and other higher education institutions in the SADC region to meet increasing demand for places has been widely documented and was briefly discussed in the literature review section above. Part of the study sought to obtain an empirical understanding of access challenges in the sampled universities. Universities were thus asked to indicate how many applications they received for undergraduate education, how many new first-year students were admitted, how many applications were received for postgraduate study, and the number of new postgraduate students admitted. The totals, on a country basis, are shown in Table 4.

Table 4 Demand for higher education in the SADC region

Country	Number of undergraduate applications	Number of new first-year undergraduate students admitted	Number of postgraduate applications	Number of new postgraduate students admitted
Angola	No data	No data	No data	No data
Botswana	7 184	5 006	892	515
DRC	15 863	11 032	1 075	471
Lesotho	4 336	1 735	247	141
Madagascar	50 819	16 474	No data	1 098
Malawi	13 098	2 081	2 000	474
Mauritius	8 000	4 993	2 500	2 290
Mozambique	12 726	10 546	639	306
Namibia	26 612	8 059	2 296	1 201
Seychelles	No data	No data	No data	No data
South Africa*	343 784	71 095	33 801	27 362
Swaziland	4 454	1 869	142	113
Tanzania	29 917	17 146	9 111	4 155
Zambia	16 640	7 640	1 471	458
Zimbabwe	25 465	12 552	5 013	1 801
SADC total	558 898	170 228	59 187	40 385

* Data provided by 12 of the 23 public universities; UNISA⁵ data are included

Since not all universities were able to provide data regarding numbers of applications and numbers of new students enrolled, the figures shown in Table 4 should be seen as indicative of trends related to higher education demand. At a regional level, approximately 30 per cent of those who apply for undergraduate study actually enrol, and 68 per cent of those who apply for postgraduate study enrol. This data thus confirm literature and media reports that document the large unmet demand for higher education in SADC countries. Given the relatively high and persistent levels of unemployment, particularly youth unemployment, the region needs to find innovative solutions to this demand challenge. It is unlikely that the demand for higher education can be met without an increasingly active private higher education sector.

When asked if they had plans to open new universities, 12 of the ministries responded in the affirmative. In all cases this would require investment in new infrastructure. Given the funding challenges discussed in Chapter 3 and later in this chapter, the creation of new universities would have significant impact, not only on other sectors of the society and economy, but on existing higher education institutions as well. This is already being experienced in South Africa as the creation of two new universities is having budget effects on existing universities.

Student profile

Based on the available data, there are approximately 1.3 million students enrolled in public universities across the region. South Africa enrolls by far the largest number of students, followed by the DRC, Tanzania, Mozambique, Angola and Madagascar. On average, across the 15 countries in the region, 51 per cent of enrolled students are female and 49 per cent are male. This implies a

5 UNISA (University of South Africa) is a distance education university that accounts for close to a third of South Africa's enrolment.

relatively sound gender balance at a regional level. However, this regional aggregate masks some major gender disparities at the country and subject levels, as is shown in the figure below (note that Angola and Seychelles are excluded as no data were available for these two countries). Lesotho, Mauritius, Namibia, South Africa and Swaziland enrol slightly larger numbers of female than male students. The remaining countries enrol larger numbers of male students, with the greatest disparities being seen in the DRC (71 per cent male students) and Madagascar (83 per cent male students). When the gender of students enrolled in different major fields of study is compared, further gender disparities emerge. Figure 2 shows that female students are much more likely to be enrolled for education, health sciences (most likely nursing), and the humanities and social sciences, while male students are more likely to be enrolled in agriculture, and science, engineering and technology fields of study.

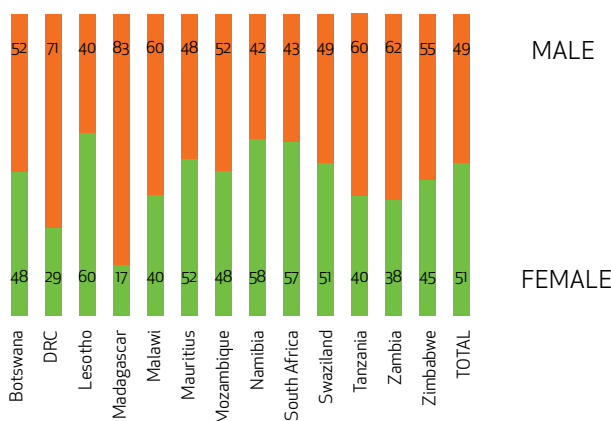
With respect to nationality, based on the data available, 94 per cent of the students enrolled in public universities in the region are national citizens. Only 4 per cent of the student body is made up of SADC students studying in a SADC country other than their own, and 2 per cent are international students from outside the SADC region. A closer look at the figures in Table 5 shows that the vast majority of the non-national students are studying at South African universities. This issue will be picked up again in Chapter 5 which focuses on regionalisation.

Table 5 SADC student nationality*

Country	National citizens	SADC	Other international
Angola	47 353	0	20
Botswana	13 837	309	539
DRC	70 564	11	117
Lesotho	12 212	108	19
Madagascar	43 970	0	490
Malawi	8 556	75	5
Mauritius	4 704	4	9
Mozambique	57 130	0	168
Namibia	21 827	2 031	159
Seychelles	No data	No data	No data
South Africa	826 817	46 204	19 915
Swaziland	5 451	62	10
Tanzania	12 099	49	302
Zambia	21 982	92	23
Zimbabwe	26 535	131	3
Total	1 173 037	49 076	21 779

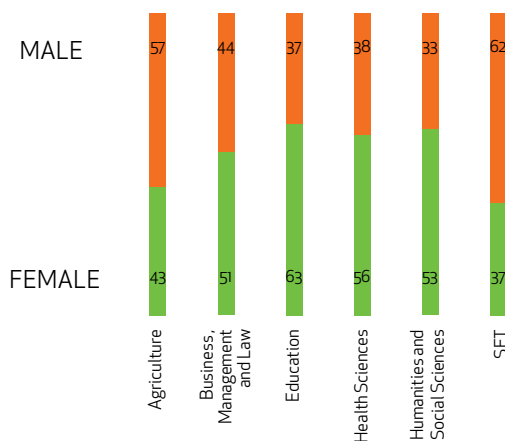
* Not all universities that submitted responses were able to provide information on the nationality of their students

Figure 1 Proportion of students by gender per country (%)*



* No student enrolment data were available by gender for Angola

Figure 2 Proportion of students by major field of study and gender (%)**



** Where proportions of gender don't total 100, it is due to errors in institutional data recordings

Figure 3 Proportional distribution of enrolled students by level of study (%)

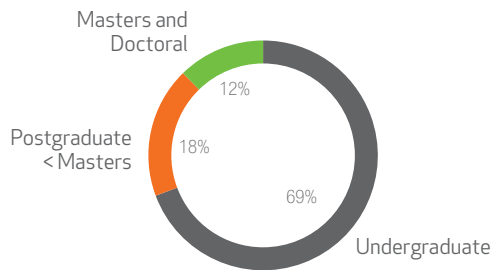
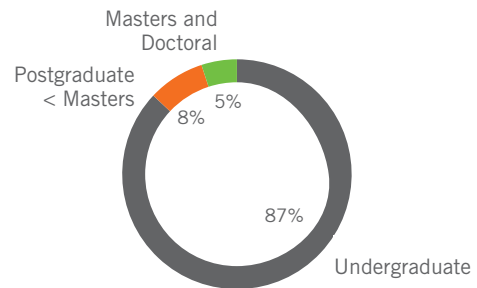


Figure 4 Proportions of students per level of study excluding South African enrolments



Enrolment profile

Student enrolment in the SADC region is largely at the undergraduate level, with undergraduate enrolments accounting for 69 per cent of all enrolments. At the postgraduate level, there is a larger proportion of students enrolled in postgraduate programmes below the masters degree level, with only 12 per cent of the total enrolment comprising students at the masters and doctoral levels (see Figure 3). South Africa accounts for the largest number of postgraduate students. If South Africa is removed, then the proportion of undergraduate students increases to 87 per cent and the percentage of masters and doctoral enrolment drops to only 5 per cent (see Figure 4). Given the focus on knowledge production noted above, this is a concerning trend.

Figure 5 disaggregates the data further to show the enrolment by level of qualification and field of study. From Figure 5 the high proportional enrolment in the fields of business, management and law is clearly evident, at all levels of study.

When one compares the 2006 data from SARUA’s first profiling study on the number of students enrolled per major field of study with the data collected in this study (for the 2010 academic year), it shows an increase in enrolments in all fields of study, although the increase in the health sciences was very small (2 910 students). Although the increase in the number of science, engineering and technology students was somewhat greater (at 38 523) than for health sciences, this level of enrolment in science and technology-related fields remains a concern given the developmental needs of the region. Of further concern is that in 2010, 76 per cent of all science and technology enrolments were accounted for by South African universities. The emerging longitudinal trends are shown in Figure 6.

Figure 5 Enrolment by level of education and major field of study (all SADC countries)

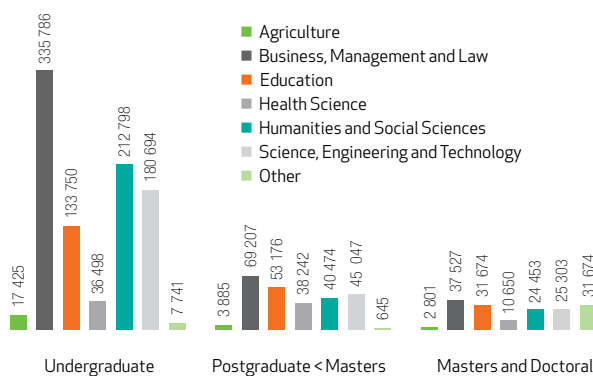


Figure 6 Enrolment by major field of study, 2006 and 2010

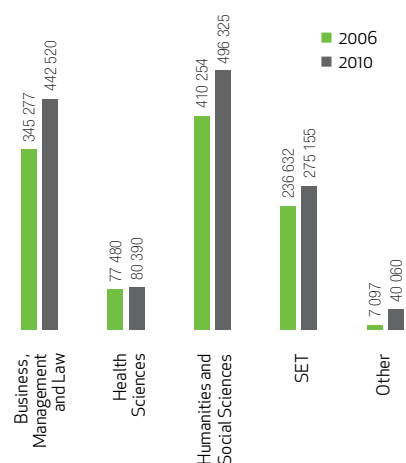
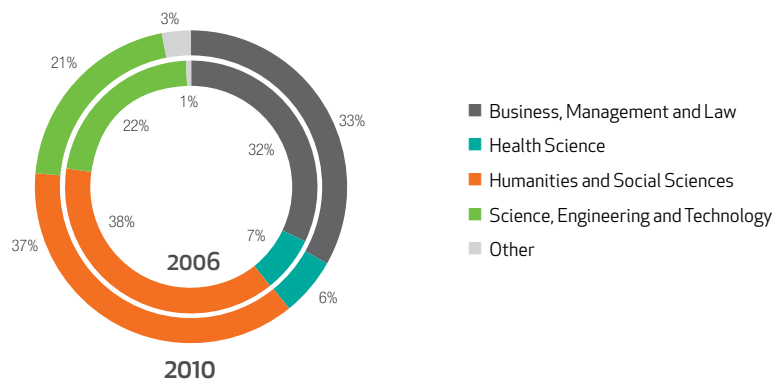


Figure 7 Proportional distribution of enrolment by major field of study in 2006 and 2010*

* In the first SARUA profiling study, education was included as a part of the humanities and social sciences, and agriculture was a part of science, engineering and technology. For comparison purposes, the education enrolment from the 2010 data has been added to humanities and social sciences, and agriculture added to science, engineering and technology in Figure 6

Thus although the absolute number of students enrolled per major field of study has increased between 2006 and 2010, the relative distribution of students per major field of study has remained remarkably constant.

Tables 6 to 12 provide additional detail of enrolment by major field of study and level of education for each of the 15 countries in the SADC region.

Table 6 Enrolment by level of study in agriculture

Country	Under-graduate	Post-graduate (<Masters)	Masters	Doctoral	Postdoc	Other	Total
Angola	No data	No data	No data	No data	No data	No data	-
Botswana	905	0	38	0	0	0	943
DRC	667	314	25	4	0	0	1 010
Lesotho	534	0	5	0	0	1	540
Madagascar	276	186	141	0	0	0	603
Malawi	883	0	66	10	0	0	959
Mauritius	320	0	25	17	0	0	362
Mozambique	762	0	0	0	0	0	762
Namibia	498	115	15	4	0	0	632
Seychelles	No data	No data	No data	No data	No data	No data	-
South Africa	8 983	3 270	1 794	467	No data	0	14 514
Swaziland	949	0	29	0	0	0	978
Tanzania	640	0	101	10	0	0	751
Zambia	558	0	18	0	0	0	576
Zimbabwe	1 450	0	29	3	0	0	1 482
Total	17 425	3 885	2 286	515	0	1	24 112

Table 7 Enrolment by level of study in business, management and law

Country	Under-graduate	Post-graduate (<Masters)	Masters	Doctoral	Postdoc	Other	Total
Angola	10 037	160	270	0	0	0	10 467
Botswana	2 451	0	175	0	0	0	2 626
DRC	16 609	4 333	27	4	0	2 857	23 830
Lesotho	1 041	77	0	0	0	0	1 118
Madagascar	14 948	4 930	1 409	53	0	76	21 416
Malawi	724	46	41	0	0	0	811
Mauritius	2 664	3	350	13	0	0	3 030
Mozambique	10 734	0	25	0	0	0	10 759
Namibia	10 992	134	132	6	5	509	11 778
Seychelles	No data	No data	No data	No data	No data	No data	-
South Africa	237 929	58 010	28 449	1 540	No data	0	325 928
Swaziland	1 802	0	0	0	0	0	1 802
Tanzania	9 935	1 035	2 528	24	0	0	13 522
Zambia	3 335	0	452	0	0	0	3 787
Zimbabwe	12 585	479	1 982	47	0	0	15 093
Total	335 786	69 207	35 840	1 687	5	3 442	445 967

Table 8 Enrolment by level of study in education

Country	Under-graduate	Post-graduate (<Masters)	Masters	Doctoral	Postdoc	Other	Total
Angola	No data	No data	No data	No data	No data	No data	-
Botswana	1 710	137	352	12	0	0	2 211
DRC	1 432	430	10	5	0	0	1 877
Lesotho	1 932	39	4	0	0	0	1 975
Madagascar	776	471	221	0	0	0	1 468
Malawi	1 084	0	32	0	0	0	1 116
Mauritius	567	2	108	0	0	0	677
Mozambique	33 679	0	587	0	0	0	34 266
Namibia	2 029	65	94	10	1	0	2 199
Seychelles	No data	No data	No data	No data	No data	No data	-
South Africa	64 156	51 770	28 292	1 194	No data	0	145 412
Swaziland	436	155	52	0	0	0	643
Tanzania	14 569	61	96	1	0	0	14 727
Zambia	7 030	0	57	4	0	0	7 091
Zimbabwe	4 350	46	330	213	0	0	4 939
Total	133 750	53 176	30 235	1 439	1	0	218 601

Table 9 Enrolment by level of study in health sciences

Country	Under-graduate	Post-graduate (<Masters)	Masters	Doctoral	Postdoc	Other	Total
Angola	1 394	0	24	0	0	0	1 418
Botswana	498	0	37	0	0	0	535
DRC	8 674	5 683	29	21	0	102	14 509
Lesotho	674	0	0	0	0	0	674
Madagascar	3 051	0	0	0	0	0	3 051
Malawi	1 163	59	49	0	0	0	1 271
Mauritius	7	0	17	0	0	0	24
Mozambique	1 445	0	52	0	0	0	1 497
Namibia	1 368	44	32	15	0	0	1 459
Seychelles	No data	No data	No data	No data	No data	No data	-
South Africa	13 187	27 441	8 923	1 064	No data	0	50 615
Swaziland	425	0	0	0	0	0	425
Tanzania	1 628	0	302	4	1	0	1 935
Zambia	1 009	12	44	0	0	0	1 065
Zimbabwe	1 975	3	32	5	0	0	2 015
Total	36 498	33 242	9 541	1 109	1	102	80 493

Table 10 Enrolment by level of study in the humanities and social sciences

Country	Under-graduate	Post-graduate (<Masters)	Masters	Doctoral	Postdoc	Other	Total
Angola	28 557	0	196	0	0	0	28 753
Botswana	4 315	0	74	3	0	0	4 392
DRC	13 706	3 987	61	29	0	0	17 783
Lesotho	3 687	0	65	4	0	0	3 756
Madagascar	8 555	1 747	149	20	0	177	10 648
Malawi	1 628	21	64	13	0	0	1 726
Mauritius	2 080	2	212	35	0	0	2 329
Mozambique	5 929	0	139	3	0	0	6 071
Namibia	2 461	116	101	18	0	0	2 696
Seychelles	No data	No data	No data	No data	No data	No data	-
South Africa	114 543	33 674	18 830	3 204	No data	0	170 251
Swaziland	1 278	0	10	0	0	0	1 288
Tanzania	11 596	877	559	16	0	0	13 048
Zambia	4 144	0	65	0	0	0	4 209
Zimbabwe	10 319	50	567	16	0	92	11 044
Total	212 798	40 474	21 092	3 361	0	269	277 994

Table 11 Enrolment by level of study in science, engineering and technology

Country	Under-graduate	Post-graduate (<Masters)	Masters	Doctoral	Postdoc	Other	Total
Angola	6 566	30	142	2	0	0	6 740
Botswana	480	0	23	5	0	0	508
DRC	6 151	1 331	16	11	524	0	8 033
Lesotho	1 032	0	1	0	0	0	1 033
Madagascar	7 129	4 036	1 892	64	0	0	13 121
Malawi	1 937	29	88	1	0	397	2 452
Mauritius	3 437	0	199	93	0	0	3 729
Mozambique	5 993	0	86	0	0	0	6 079
Namibia	3 089	245	38	29	4	0	3 405
Seychelles	No data	No data	No data	No data	No data	No data	-
South Africa	125 852	38 347	17 888	4 118	No data	0	186 205
Swaziland	363	0	24	0	0	0	387
Tanzania	7 852	607	202	14	0	0	8 675
Zambia	5 981	0	7	1	0	0	5 989
Zimbabwe	4 832	422	337	22	0	0	5 613
Total	180 694	45 047	20 943	4 360	528	397	251 969

Table 12 Enrolment by level of study in other fields of study

Country	Under-graduate	Post-graduate (<Masters)	Masters	Doctoral	Postdoc	Other	Total
Angola	0	0	0	0	0	0	0
Botswana	248	0	0	0	0	0	248
DRC	106	635	0	4	0	264	1 009
Lesotho	3 909	0	41	0	0	0	3 950
Madagascar	157	0	0	0	0	0	157
Malawi	0	0	0	0	0	0	0
Mauritius	676	2	78	1	0	0	757
Mozambique	296	0	0	0	0	0	296
Namibia	1 674	0	17	0	0	419	2 110
Seychelles	No data	No data	No data	No data	No data	No data	-
South Africa	0	0	0	0	0	0	0
Swaziland	0	0	0	0	0	0	0
Tanzania	82	0	16	0	0	636	734
Zambia	208	8	0	0	0	0	216
Zimbabwe	385	0	0	0	0	28	413
Total	7 741	645	152	5	0	1 347	9 890

Staff profile

As was the case with the student profile, the gender profile of academic and research staff members remains uneven, although it has improved somewhat since the initial profiling study. Figure 8 shows the gender distribution of academic and research staff across all SADC countries, with South African data excluded. We see that 70 per cent of the academic and research staff members (when South Africa is excluded) are male. This represents a drop of 5.5 per cent since the 2006 data showed that the academic and research staff were 75.5 per cent male (Butcher et al. 2008:101). When South African data are included, the gender proportions have also improved slightly, from 39.0 per cent female staff members in 2006 to 42 per cent female staff members in 2010.

Tables 13 and 14 provide the detail of the gender and type of employment of academic/research and administrative/management staff members per country.

Table 13 Gender distribution of permanent and temporary academic/research staff

Country	Permanent (female)	Permanent (male)	Temporary (female)	Temporary (male)
Angola	217	641	0	0
Botswana	180	301	136	189
DRC	76	822	11	128
Lesotho	No data	No data	No data	No data
Madagascar	332	713	563	806
Malawi	164	542	8	56
Mauritius	239	20	50	3
Mozambique	215	718	84	220
Namibia	475	536	253	444
Seychelles	No data	No data	No data	No data
South Africa	7 307	9 291	14 219	15 510
Swaziland	86	89	21	78
Tanzania	859	2 709	25	163
Zambia	88	201	90	478
Zimbabwe	465	1 296	166	545
Total	10 703	17 879	15 626	18 620

Figure 8 Gender distribution of academic/research staff members

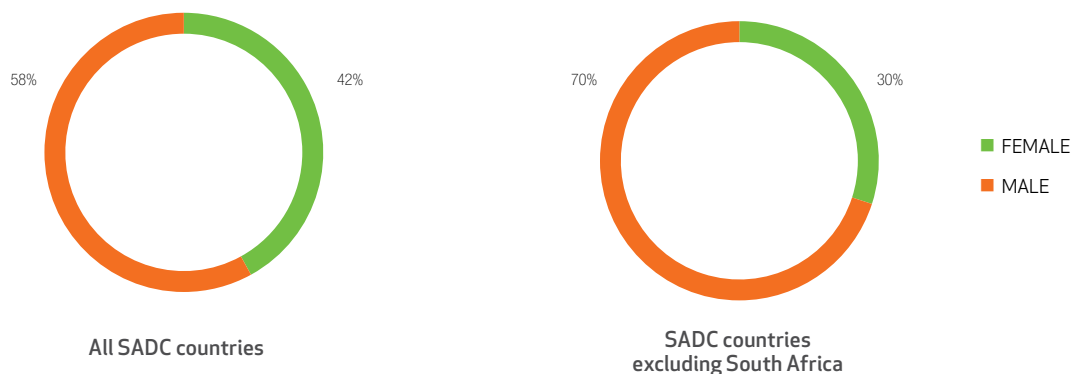


Table 14 Gender distribution of permanent and temporary administrative/management staff

Country	Permanent (female)	Permanent (male)	Temporary (female)	Temporary (male)
Angola	379	350	0	0
Botswana	586	507	146	224
DRC	566	1 441	13	44
Lesotho	No data	No data	No data	No data
Madagascar	443	859	314	394
Malawi	240	928	6	10
Mauritius	611	26	244	9
Mozambique	249	346	96	150
Namibia	270	194	77	73
Seychelles	No data	No data	No data	No data
South Africa	15 633	9 572	26 793	22 267
Swaziland	25	32	3	8
Tanzania	1 250	1 716	93	214
Zambia	147	392	325	663
Zimbabwe	918	1 186	23	95
Total	21 317	17 549	28 133	24 151

Similar to the trends seen above regarding the nationality of students, the majority of staff members employed at public universities in the SADC region are national citizens of the countries in which they are working. For academic and research staff members, 87 per cent are national citizens, 2 per cent hail from other SADC countries, and 11 per cent from countries outside of SADC. Thus, mobility of international academic staff outside of SADC is greater than within SADC. Almost all management and administrative staff members (94 per cent) are national citizens. Tables 15 and 16 provide staff nationality data per SADC country. With respect to mobility of SADC academics, only South Africa and Botswana have a relatively large proportion of staff members from other SADC countries. Angola has a relatively high number of international academics, but there was no evidence of academics from the region.

Table 15 Nationality of academic/research staff members

Country	National citizens	SADC	Other international
Angola	1 329	0	172
Botswana	514	102	190
DRC	2 701	0	8
Lesotho	No data	No data	No data
Madagascar	1 163	0	0
Malawi	843	6	41
Mauritius	304	0	8
Mozambique	2 440	17	121
Namibia	783	75	45
Seychelles	No data	No data	No data
South Africa	15 110	481	3 325
Swaziland	183	25	66
Tanzania	3 884	5	69
Zambia	807	9	41
Zimbabwe	2 407	16	33
Total	32 468	736	4 119

Table 16 Nationality of management/admin staff members

Country	National citizens	SADC	Other international
Angola	1 602	0	0
Botswana	1 400	25	40
DRC	2 065	0	0
Lesotho	No data	No data	No data
Madagascar	2 160	0	0
Malawi	1 189	0	4
Mauritius	813	0	7
Mozambique	3 238	3	6
Namibia	542	5	3
Seychelles	No data	No data	No data
South Africa	68 900	1 862	3 274
Swaziland	60	4	4
Tanzania	3 542	0	0
Zambia	1 527	0	0
Zimbabwe	2 201	0	0
Total	89 239	1 899	3 338

The largest proportion of academic and research staff is found in the science, engineering and technology major field of study (27 per cent), followed by the humanities and social sciences (21 per cent) and business, management and law (18 per cent). This differs somewhat from the distribution of students per major field of study (see Figure 5) where the largest numbers of students enrolled in business, management and law, followed by the humanities and social sciences, and then science, engineering and technology. The differences are understandable due to the different teaching and learning requirements, such as practical and laboratory work required in the sciences. Figure 9 provides a summary of the distribution of academic and research staff by major field of study and Table 17 shows a breakdown per SADC country.

Table 17 Number of academic and research staff members by major field of study

Country	Agriculture	Business, management and law	Education	Health sciences	Humanities and social sciences	Science, engineering and technology	Other
Angola	0	270	0	153	627	451	0
Botswana	0	81	165	73	226	261	0
DRC	46	527	140	537	973	353	288
Lesotho	0	0	0	0	0	0	0
Madagascar	49	107	85	67	153	509	921
Malawi	144	58	76	192	166	254	0
Mauritius	19	51	1	142	64	10	4
Mozambique	4	185	0	256	354	442	51
Namibia	82	244	223	81	88	292	666
Seychelles	No data	No data	No data	No data	No data	No data	No data
South Africa*	416	3 529	1 204	1 973	3 206	5 182	0
Swaziland	56	30	40	28	63	57	0
Tanzania	177	385	155	357	422	566	1 131
Zambia	77	68	159	319	153	258	5
Zimbabwe	261	450	223	253	587	598	55
Total	1 331	5 985	2 471	4 431	7 082	9 233	3 121

*South African data refer to full-time equivalents and not head counts

Figure 9 Distribution of academic and research staff by major field of study

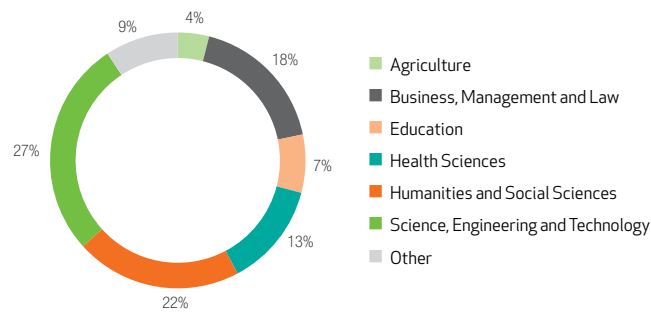
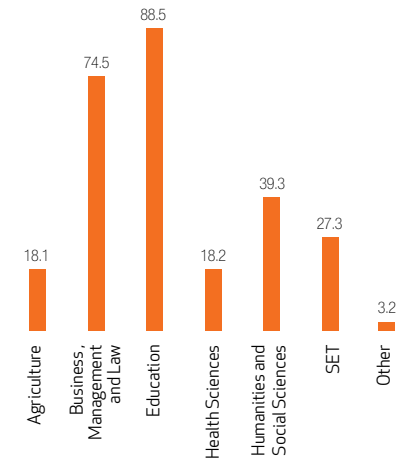


Figure 10 Estimated number of students per staff member



Based on the student enrolment data and the academic/research staff numbers, estimated staff to student ratios were calculated for the region. These estimated ratios point to some potentially concerning trends of larger student enrolments without the requisite number of academic/research staff members needed to provide quality education. Noteworthy is the ratio of one staff member to 88.5 students in education and one staff member to 74.5 students for business, management and law. The relatively low ratio for health sciences is more positive as clinical disciplines require a greater degree of interaction between staff and students. The ratio for humanities and social sciences is relatively low in comparison to education and business, management and law, and this might point to an overstaffing to the detriment of other fields.

Unfortunately the data provided by universities with respect to the qualifications of their academic and research staff members were fairly incomplete, with several universities not able to provide this information. No data were available for Angola, Botswana, Lesotho, Mauritius and Seychelles. For this reason, the absolute numbers of staff members with different levels of qualifications has not been presented, nor a breakdown given by country. However, proportions were calculated using the data that were provided in an attempt to present some picture of the levels of qualifications of academic staff members in the region. These proportions should be seen as indicative estimates only and further research would be needed to verify and complete the data. Nevertheless the proportion of staff members per qualification level has remained remarkably consistent when the 2006 and 2010 data are compared (Figure 11).

Figure 11 Highest level of qualification of academic/research staff members in 2006 and 2010

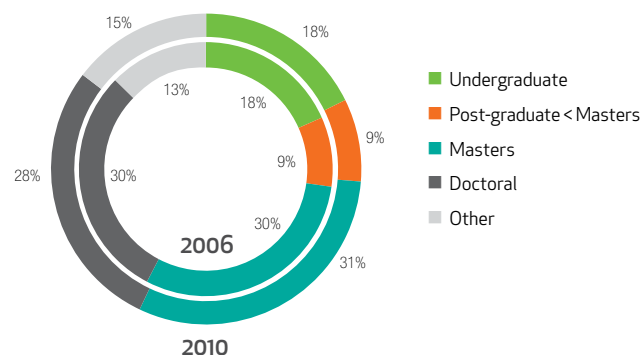
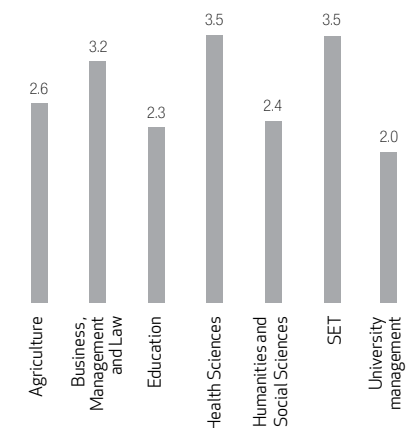


Figure 12 Regional estimates of extent of staff shortages



The universities were asked to reflect on the extent of staff shortages currently being faced. A scale of 1 to 5 was used for the estimates, with 1 being no shortage and 5 being extreme shortage. Not all universities provided the data, but the averages at national and regional levels are telling, especially when considered against the staff:student ratios shown above. The greatest staff shortages were noted in health sciences, science, engineering and technology, and the business, management and law fields. Despite the fact that the staff:student ratio for education was very high (88.5 students per academic staff member), little shortage was reported in this area. The shortages identified for health sciences and science, engineering and technology are most likely indicating the need to increase student enrolment in these areas, which at present is not possible without significant investment in new staff recruitment. The lowest extent of staff shortage was seen in the area of institutional management and this is consistent with the results of the previous profiling study (Butcher et al. 2008:101).

In Table 18 the results are shown per country to provide a more nuanced picture. As seen in the table, no data were available for Angola, Botswana, DRC, Namibia and Seychelles. The South African data was based on the responses of 12 of the 23 universities. Shortages of health sciences staff members were identified at the regional level, but the disaggregated results below show that these shortages are particularly severe in Botswana, Lesotho and Swaziland, all of which have an average of 5 (extreme shortage). Lesotho also had a rating of 5 for the science, engineering and technology fields. Most countries reported a relatively lower extent of staff shortages in the areas of humanities and social sciences, with the exception of Mauritius where this field was given a rating of 4.

Table 18: Estimates of extent of staff shortages

Country	Agriculture	Business, management and law	Education	Health sciences	Humanities and social sciences	Science, engineering and technology	University management
Angola	No data	No data	No data	No data	No data	No data	No data
Botswana	No data	4.0	1.0	5.0	1.0	4.0	1.0
DRC	No data	No data	No data	No data	No data	No data	No data
Lesotho	3.0	3.0	2.0	5.0	3.0	5.0	4.0
Madagascar	3.0	3.8	4.3	4.0	2.7	3.7	2.0
Malawi	1	2	1	1	1	2	No data
Mauritius	1.0	2.5	1.0	3.0	4.0	3.0	2.0
Mozambique	5.0	5.0	1.0	No data	1.0	5.0	1.0
Namibia	No data	No data	No data	No data	No data	No data	No data
Seychelles	No data	No data	No data	No data	No data	No data	No data
South Africa	2.3	2.5	2.3	3.3	2.6	3.3	2.8
Swaziland	3.0	3.0	4.0	5.0	3.0	3.0	1.0
Tanzania	No data	3.0	4.0	3.3	2.3	3.0	1.5
Zambia	2.7	3.3	3.0	3.0	3.3	3.0	3.0
Zimbabwe	2.6	2.7	1.7	2.6	2.3	3.6	1.4
SADC average	2.6	3.2	2.3	3.5	2.4	3.5	2.0

Funding patterns

Higher education funding is an issue that continues to receive much attention in academic literature and policy discussions at institutional, national, regional and international levels (see Chapter 3). In the aftermath of the global economic crisis, the importance of understanding funding trends has gained even greater prominence. Higher education finance links to almost all higher

education issues and beyond. The profiling study set out to provide a broad understanding of higher education funding in the region. Ministries of education and universities were asked a series of questions related to their funding and spending patterns. In this section a summary of the results is presented and, where possible, compared to the trends reported in SARUA's previous profiling research. Due partly to the sensitive nature of funding at national and institutional levels as well as a lack of comprehensive funding structures in most countries, the quality and accuracy of the funding data obtained in both profiling studies remain problematic. Despite extended attempts at verification, in many cases it was not possible to access better quality data. As a result, some of the data that were clearly inconsistent or inaccurate have been excluded from the analysis. The data presented here should be seen as indicative of broad funding trends. SARUA has in the past conducted research specifically focused on funding that could be further consulted (Pillay 2008).

Based on the available data, it appears that the percentage of national budget allocated to education (all levels) has remained relatively constant from 2006 to 2010. The main outlier is Lesotho, that reported a greatly increased proportional spending on education in 2010. This increased the regional average, as shown in Table 19. On the whole, however, it seems that the percentage of government spending on education remains relatively stable. Although the survey asked about the proportion of the national education budget allocated to higher education specifically, many ministries did not provide data for that specific question and there are too much missing data to make a meaningful assessment of higher education spending across the region.

Table 19 Annual education expenditure (% of total national budget)

Country	2006	2007	2008	2009	2010
Angola	No data	No data	No data	No data	No data
Botswana	27.0	28.2	26.4	29.4	32.6
DRC	6.4	7.9	9.4	7.3	4.9
Lesotho	25.5	25.5	20.8	26.7	50.7
Madagascar	No data	No data	No data	No data	No data
Malawi	No data	No data	20.0	20.0	20.0
Mauritius	13.3	13.5	12.4	12.3	No data
Mozambique	No data	No data	No data	No data	No data
Namibia	20.2	20.8	21.3	21.5	21.8
Seychelles	13.4	12.5	13.0	9.5	9.8
South Africa	18.1	18.1	17.8	17.9	17.7
Swaziland	25.0	25.0	24.0	23.0	19.0
Tanzania	No data	No data	No data	No data	No data
Zambia	14.4	15.7	15.6	18.2	19.4
Zimbabwe	No data	24.0	15.0	16.0	19.0
SADC average	18.9	19.7	18.0	19.0	24.1

When asked whether the country makes use of a funding formula for allocating the higher education budget to institutions, five countries responded 'yes', seven countries responded 'no', and the remaining three countries did not provide any data. The five countries that reported having a funding formula were DRC, South Africa, Swaziland, Tanzania and Zambia. Supporting documentation explaining the funding formula was also requested, but no details were provided.⁶

Nine of the fifteen SADC countries report having a national student loan scheme in place. One

⁶ South Africa's funding formula information is publicly available on the Department of Higher Education and Training (DHET) website (www.dhet.gov.za/LinkClick.aspx?fileticket=bvz%2bH%2bUhnuy%3d&tabid=411&mid=1369). However, since information was not available for the remaining countries, this report does not reflect in further detail on this issue.

country noted that they did not have such a scheme, while the remaining five countries did not provide information. Universities provided estimates of the percentage of their students who received some form of financial support (including government funding, private bank loans, bursaries and scholarships), and the percentage of their students estimated to be in debt. The results per country are shown in Table 20. At a regional level, it is estimated that about 66 per cent of students enrolled at public universities receive some form of financial support, while approximately 28 per cent are thought to be in debt. As is seen in Table 20, the regional averages mask, to some extent, disparities across countries regarding financial support for students. Estimated student debt levels are highest in Malawi and Swaziland, and lowest in Botswana, Madagascar and Mauritius.

Table 20 Estimates of student financial support and debt

Country	Percentage of students receiving financial support	Percentage of students with debt
Angola	No data	No data
Botswana	90	0
DRC	No data	No data
Lesotho	90	5
Madagascar	76	0
Malawi	90	98
Mauritius	2	1
Mozambique	No data	No data
Namibia	65	13
Seychelles	No data	No data
South Africa*	49	11
Swaziland	98	97
Tanzania	87	49
Zambia	35	10
Zimbabwe	48	28
SADC averages	66	28

*Data provided by 10 of the 23 universities in South Africa

The pattern of public universities' income sources is presented in Figure 13. Interesting changes can be seen in the proportional allocations of income sources with evidence of decreasing government funding for public higher education, a growing dependence on student fees, as well as third-stream income (donations and other), although third-stream income remains at very low levels. The data also point to an increasing dependence of universities on loans to meet the income needs. Although still relatively low, the proportion of loans as a percentage of university income has increased: in 2006 loans accounted for only 0.5 per cent of universities' income at a regional level, and by 2010 this had grown to 3.6 per cent. Further longitudinal monitoring of these trends is important, as well as in-depth assessments of the implications that these changing funding trends hold for both national and regional higher education sectors.

The regional averages shown in Figure 13 are presented per country in Table 21. Botswana and Madagascar currently receive over 80 per cent of their income from government subsidies and grants, while universities in Mauritius, Mozambique and DRC depend most heavily on student fees for income.

Respondent universities also provided data about their spending patterns. As with the income data, several universities were not able to provide data, and in some cases the data provided were not sufficiently accurate to use.⁷ As discussed in the methodology section, it was not feasible to

⁷ For example, in one instance total expenditure added up to 224 per cent. In this case the data were excluded from the analysis.

audit or verify the data provided within the scope of this study and the figures presented here should thus be treated with caution. National and regional averages were calculated to provide an initial indication of universities' spending trends. Regionally, the largest proportion of university spending is on salaries (63.1 per cent), followed by operational costs (24.4 per cent). As seen in Table 22, there are also some significant differences across countries. For example, Zimbabwean universities report spending 94.7 per cent of their budget on salaries and Lesotho 82.0 per cent, while Malawian universities report spending only 29.0 per cent on salaries. Madagascar, Namibia and Tanzania spend relatively larger proportions on student financial support compared to other countries. Across the board, very little money is spent on community service-related activities. This presents an important question about the notion of the 'third mission' of the university and the relevance of universities to their immediate and extended communities.

Table 21 Universities' sources of income*

Country	Student fees (%)	Government subsidy/grants (%)	Donations: private individual/trusts (%)	Donations: private sector (%)	Donations: international (%)	Loans (%)	Other (%)
Angola	No data	No data	No data	No data	No data	No data	No data
Botswana	10.0	88.5	0.0	0.0	0.0	0.0	1.5
DRC	64.0	36.2	2.7	2.0	4.3	8.4	0.8
Lesotho	48.0	45.0	0.0	0.0	0.0	1.0	7.0
Madagascar	10.0	88.3	0.0	0.0	5.0	0.0	10.0
Malawi	10.0	48.0	0.0	0.0	42.0	0.0	0.0
Mauritius	71.3	27.0	1.7	0.0	0.0	0.0	0.0
Mozambique	69.5	30.0	0.0	0.0	0.5	0.0	0.0
Namibia	33.5	58.3	0.5	14.2	1.8	34.1	4.6
Seychelles	No data	No data	No data	No data	No data	No data	No data
South Africa	31.8	43.4	1.5	1.6	0.6	2.4	20.3
Swaziland	19.0	68.0	0.0	0.0	0.0	0.0	13.0
Tanzania	36.5	47.4	0.0	11.0	0.1	0.0	5.1
Zambia	48.7	40.3	0.0	0.1	0.4	0.6	10.0
Zimbabwe	40.3	57.4	0.2	0.1	0.6	0.6	3.2
SADC average	37.9	52.1	0.5	2.2	4.2	3.6	5.8

* Country totals do not always add up to 100 per cent due to estimations provided by many of the universities that responded

Figure 13 Universities' sources of income, 2006 and 2010

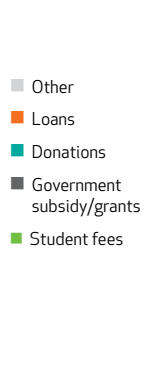


Figure 14 University spending patterns across SADC

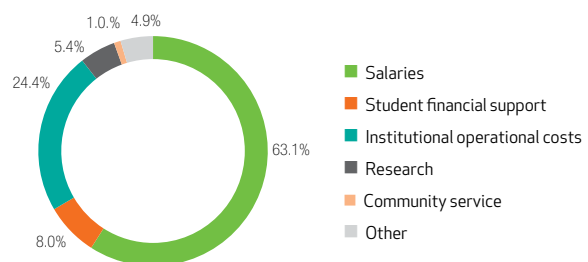


Table 22 University spending patterns per SADC country

Country	Salaries (%)	Student financial support (%)	Institutional operational costs (%)	Research (%)	Community service (%)	Other (%)
Angola	No data	No data	No data	No data	No data	No data
Botswana	48.0	0.0	52.0	0.0	0.0	0.0
DRC	71.0	2.3	20.0	7.0	5.0	0.0
Lesotho	82.0	0.0	18.0	0.0	0.0	0.0
Madagascar	65.2	41.7	9.2	2.0	1.0	5.0
Malawi	29.0	0.0	39.0	24.0	0.0	8.0
Mauritius	78.1	0.1	21.5	0.9	0.0	0.0
Mozambique	45.2	1.5	12.0	1.2	0.0	26.0
Namibia	54.7	36.0	15.3	0.6	4.7	0.0
Seychelles	No data	No data	No data	No data	No data	No data
South Africa	59.2	5.0	27.5	6.0	0.4	8.3
Swaziland	71.0	0.0	24.0	5.0	0.0	0.0
Tanzania	43.6	15.6	14.6	20.1	0.6	1.5
Zambia	72.0	1.6	21.2	1.2	0.0	4.5
Zimbabwe	94.7	0.1	43.1	2.3	1.4	0.4
SADC average	63.1	8.0	24.4	5.4	1.0	4.9

Quality and availability of services

The many and varied quality challenges facing African and SADC higher education were briefly discussed in Chapter 3. Globally, and within SADC, there has been a growing focus on issues of quality in higher education (see for example SADC Protocol Review 2007, UNESCO/ADEA 2009). In 1997 a SADC Technical Committee on Certification and Accreditation (TCCA) was set up. The TCCA is responsible for the development of the SADC Qualifications Framework (SADCQF). It is important to clarify, however, that the notion of university quality is not fully encompassed in the more limited notion of quality assurance. While quality assurance – the processes of making sure that universities offer quality education – is essential, deeper notions of quality are needed. When assessing quality, issues of infrastructure availability, provision of student support services and curriculum relevance need to be considered. While the study provides no data on curriculum relevance, this section presents data related to infrastructure availability and quality, student support services, as well as the manner in which universities track student performance and approach teaching and learning. In the final part of the section attention is turned to issues of quality assurance, such as peer review processes, quality assurance policy and budget.

Of the universities that submitted questionnaire responses (see Table 1 for details), 74 per cent reported having an institutional research office and all indicated having some structures in place to track the performance of their students. An even larger percentage, 78 per cent of the universities, reported that they have a teaching and learning strategy. Universities were asked to provide documentation in support of their responses, but none was forthcoming and it was thus not possible to verify the reports. Nonetheless, it does appear that universities in the region are attempting to engage with issues of teaching and learning quality. Despite this apparent recognition of teaching and learning, the data provided by universities regarding the provision of student services as well as quality teaching and learning infrastructure are indicative of a worrying situation. This is demonstrated in the section below.

Universities were provided with a list of student support services and were asked to separately

rate the availability and then the quality of the services. Three- and five-point rating scales were used for the ratings as follows:

- Availability: 1 = not available, 2 = available but cannot accommodate student numbers, 3 = available and sufficient to accommodate student numbers
- Quality: 1 = very poor, 2 = poor, 3 = reasonable, 4 = good, 5 = very good

The results at the regional level are shown in the figures below.

An analysis of the data presented in Figures 15 and 16 shows that there are shortages of all student support services. In terms of availability, the best rated services were academic orientation, sports facilities and information about study opportunities at other universities. The availability of support for international students, social and cultural activities and language training were rated most poorly. The ratings of the quality of student services tended to be around the mid-point of the rating scale (3 = reasonable), indicating that in many instances, although services are available, they are not of sufficient standard to really add to the quality of education provided. Similar questions, using the same rating scales as for student services, were asked in relation to infrastructure.

As with student support, universities’ responses point to concerns regarding both the availability and the quality of teaching and learning infrastructure. Although there were no indications of important teaching and learning infrastructure not being provided at all, in most instances the available resources are insufficient to accommodate the existing numbers of students, and in all instances the quality is rated as reasonable. On the positive side was the fact that participating universities all indicated at least some availability of digital library material. Availability of local and international literature and research is critical for expanding and improving the quality of the research output of universities in the region and, arguably, much of this would be accessed digitally. Another important issue which this study did not investigate is the extent to which libraries and library resources are making use of new technologies and have subscriptions to academic journals with access to current and cutting-edge resources in the different fields of study.

Similar results were found for infrastructure that does not fall directly in the domain of teaching and learning, although the quality ratings tended to be poorer. A particular challenge appears to be the provision of recreational spaces for students, and student accommodation, both of which are very important to consider in debates about further expansion of student numbers.

Quality assurance

The previous section presented a picture of the quality of teaching and learning infrastructure, other types of infrastructure and the provision of important student support services that are known to impact on the quality of teaching and learning as well as research. In this section our attention turns to quality assurance processes at regional, national and institutional levels.

Figure 15 Availability of student support services (SADC average)

Figure 16 Quality of student support services (SADC average)

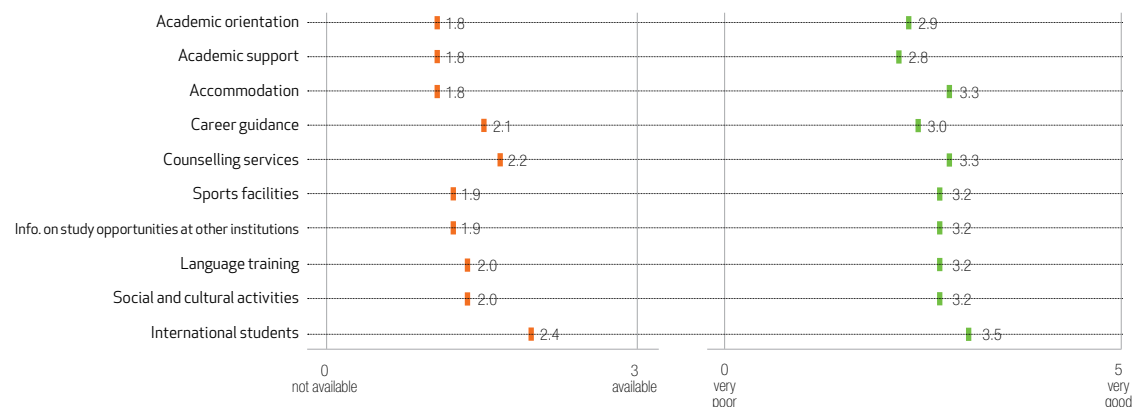


Figure 17 Availability of teaching and learning infrastructure (SADC average)

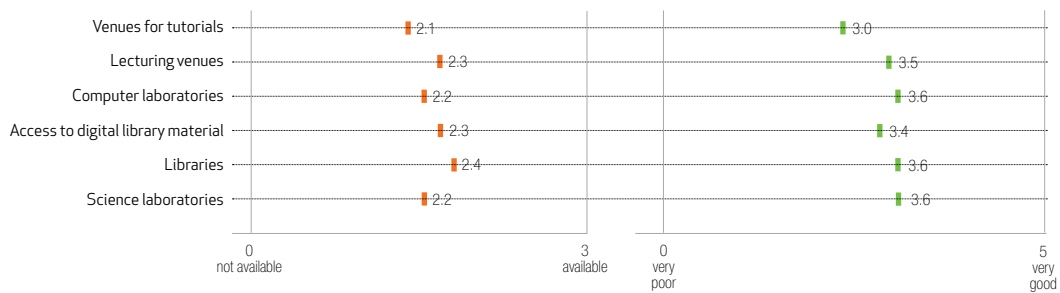


Figure 18 Quality of teaching and learning infrastructure (SADC average)

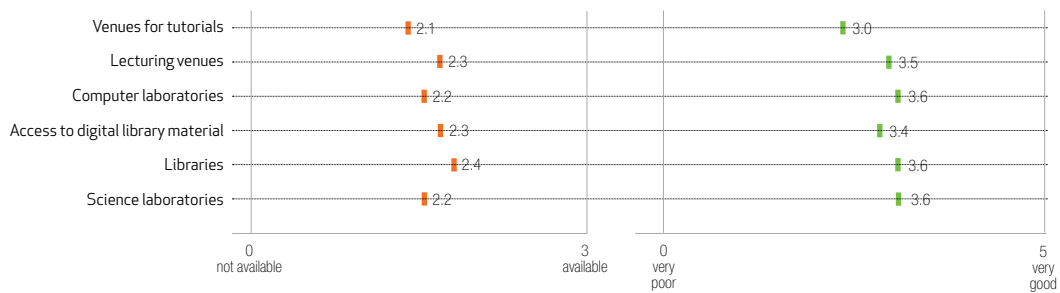


Figure 19 Availability of other infrastructure (SADC average)

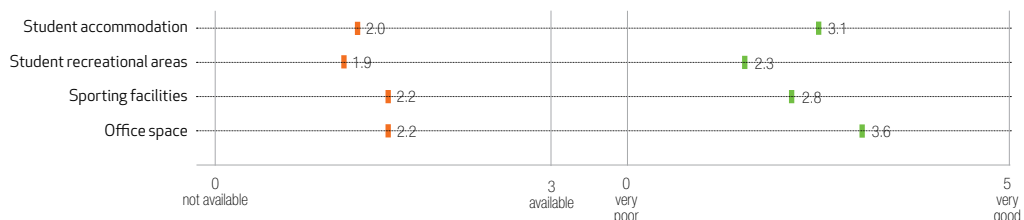
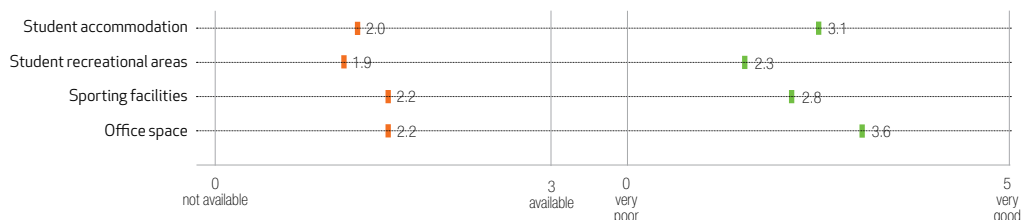


Figure 20 Quality of other infrastructure (SADC average)



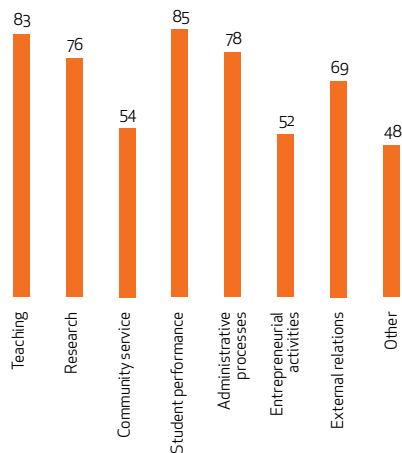
While the majority (eight out of twelve) of the ministries of education that provided data reported that they have a national quality assurance system in place, only four set performance targets for universities. The eight countries that reported having quality assurance systems noted that private higher education is also included in the frameworks, and all indicated that they provide some form of technical support to universities in the area of quality assurance. All eight include the monitoring of university governance and management within the ambit of quality assurance. Lesotho and Swaziland both reported that they do not have national-level quality assurance procedures in place, but Lesotho reported that theirs is currently being developed.

Although a promising 83 per cent of the universities that submitted a response reported that they had an internal quality assurance procedure in place, only 56 per cent reported having a specific budget allocated for quality assurance. These figures represent an improvement since 2006, when 78 per cent of participating university had internal quality assurance processes in place and only 48 per cent had a specific budget allocated to quality assurance (Butcher et al. 2008: 111).

Figure 21 shows the areas of performance that are included within institutional quality assurance frameworks. The pattern of results is remarkably similar to that found in the previous profiling study (Butcher et al. 2008:112). A total of 80 per cent of the participating universities reported that they conduct peer review quality assessments, while 90 per cent do internal evaluations, 72 per cent provide training for newly appointed staff members, 76 per cent have mechanisms in place for ongoing staff development and 78 per cent have processes in place for evaluating individual teaching staff.

Somewhat concerning is the low proportion of universities making use of external examiners and independent moderators for examination assessment. The 2006 data pointed to a total of 64 per cent of universities making use of external examiners. In the current study the proportion has increased slightly to 69 per cent. While this increase is positive given the importance of external examination in ensuring quality (and particularly so in the context of regionalisation, credit transfer and cross-national recognition of qualifications), all universities in the region should be required to make use of external examiners. One of the major reasons that external examination is important is that this practice contributes to the creation of a 'regional community of scholars' and leading the 'development of comparable standards in higher education across the region' is emphasised in the SADC Protocol on Education and Training (SADC 1997:8).

Figure 21 Areas included in institutional quality assurance frameworks (percentage SADC universities responding 'Yes')



Thus, on the whole, there appears to have been some positive development in the broad area of quality assurance practices from 2006 to 2010, but more work is needed at the national level in order to put in place quality assurance policies and procedures that underpin regionalisation.

Regional higher education outputs

The profile of SADC public higher education presented here has thus far focused on the inputs and processes of higher education. In this section the focus turns to outputs.

A review of recent research reports on revitalising higher education in Africa done during this study highlighted that most often research and intervention tend to be focused on redressing the previously skewed higher education system in Africa in general and SADC in particular. This includes issues related to access, quality, equity and funding (Kotecha 2008a, AAU 2004, Materu 2007) – as was also the focus earlier in this chapter. There has, arguably, been somewhat less discourse and practice around knowledge production for the 21st century in the context of African higher education. While the former issues remain important, additional questions must also be asked, such as: Why increase access? Why increase higher education quality? Why equity? Why increase national and regional funding for higher education? What output is higher education delivering that contributes to building knowledge economies and democratic societies? Answers to these questions are important if the aim is to work towards a regional higher education sector that is able, amongst other things:

to ensure the existence of strong and vibrant institutions in the region that produce quality, relevant and adequately skilled and educated human resources; are actively engaged in development-orientated research and teaching; involved in community service and provide enrichment of service to lower levels of education. Such institutions will function in an environment of academic freedom, institutional autonomy and have public accountability (ADEA WGEMPS 2009:26).

This section focuses specific attention on the outputs of higher education in the SADC region and the extent to which these outputs align with regional imperatives. Two specific types of outputs are considered: graduation trends and research output.

Graduation trends

As was shown earlier in this chapter, the enrolment profile for SADC is dominated by undergraduate enrolments in fields related to business, management and law, followed by the

humanities and social sciences, and then (with somewhat smaller numbers) science, engineering and technology, education and health sciences, and agriculture. Based on the data available (see Figure 6) some growth in student numbers appears to have occurred between 2006 and 2010, although, arguably, not at the levels required to meet skills demands in the region. The data presented above also highlight the worryingly persistent gender divides in some countries in the region, although at the aggregate level regionally the enrolment by gender is fairly well balanced. In this section, these trends are mirrored in the graduation data, but with some important differences.

The regional graduation profile is even more heavily skewed towards undergraduate qualifications, with 79 per cent of graduations being at the undergraduate level, 15 per cent at postgraduate level, 6 per cent at the masters level and only 1 per cent at doctoral level. If the South African data are removed, the proportion of undergraduate graduations increases to 88 per cent, postgraduate graduation below masters level is 5 per cent, and masters and doctoral qualifications together represent 5 per cent of the total. Figure 22 presents a comparison of enrolments and graduations for 2010 at a regional level, including South Africa. Figure 23 presents the same comparison, but with the South African data removed.

Thus, across the region, both enrolment and graduate numbers are overwhelmingly at the undergraduate level. When comparing Figures 22 and 23, with the South African data included, an even larger proportion of graduates compared to enrolments is found at the undergraduate level, while the proportions of graduates at the postgraduate levels are lower than enrolments. The same is not true when the South African data is removed (Figure 23). In this instance the proportions of graduates and enrolments are almost equal. The disparity seen in Figure 22 can be explained by the low throughput rates of postgraduate students in South Africa, a phenomenon known as 'pile-up'. In a report prepared by the Academy of Science for South Africa (ASSAF) in 2010, pile-up is defined as 'the state of affairs where students remain enrolled for the degree much longer than expected' (ASSAF 2010:74).

The ASSAF report documents the extent of pile-up in doctoral education in South Africa. At the regional level there were a total of 1 546 doctoral graduates recorded in 2010. Only 125 of these graduated in countries other than South Africa. Thus South Africa currently accounts for about 92 per cent of the doctoral graduates in the region. Figure 7 showed that the proportional distribution of enrolments per major field of study had stayed consistent from 2006 to 2010. With respect to graduation, although the overall trends are consistent, it is concerning to note that the proportion of graduates in science, engineering and technology and health sciences has decreased slightly from 2006 to 2010, although there has been a small increase in the absolute numbers.

Figure 22 SADC enrolments and graduates by education level, including South Africa (percentage, 2010)

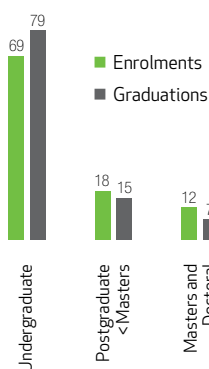


Figure 23 SADC enrolments and graduates by education level, excluding South Africa (percentage, 2010)

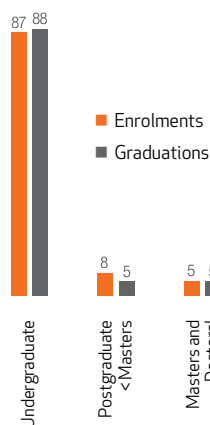


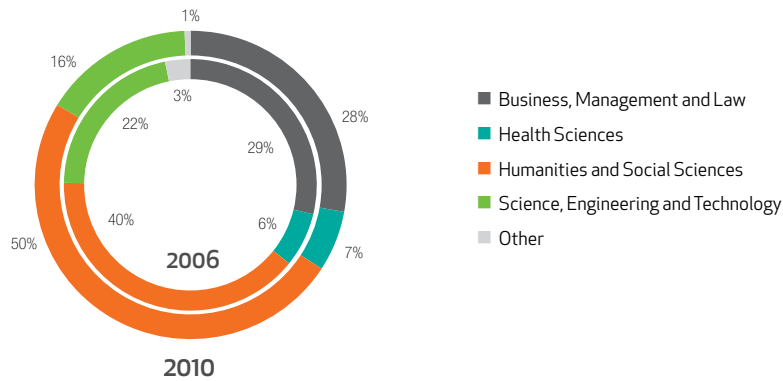
Figure 24 Proportional distribution of graduates by major field of study in 2006 and 2010

Figure 24 shows that humanities and social sciences (including education) accounted for 40 per cent of the graduations in 2006, and by 2010 this field of study accounted for 50 per cent of the graduates. While strong humanities, social sciences, and education is needed for regional development and building of democracy, the very large proportion of students graduating in the area is cause for concern, especially in a region such as SADC that requires investment in infrastructure, science and technology.

Tables 23 to 29 present the graduation data per field and level of study for each of the 15 SADC countries. The final row in each table sums up the regional numbers.

Table 23 Qualifications by level of study in agriculture

Country	Undergraduate	Postgraduate (<Masters)	Masters	Doctoral	Other
Angola	0	0	0	0	0
Botswana	216	0	0	0	0
DRC	132	112	25	4	0
Lesotho	9	0	3	0	0
Madagascar	0	91	0	0	0
Malawi	182	0	8	0	0
Mauritius	81	0	3	1	0
Mozambique	405	0	0	0	0
Namibia	99	26	1	0	0
Seychelles	No data	No data	No data	No data	No data
South Africa	1999	273	245	64	0
Swaziland	323	0	2	0	0
Tanzania	700	0	86	4	0
Zambia	2	0	4	0	0
Zimbabwe	571	5	47	0	0
SADC total	4 719	416	424	73	0

Table 24 Qualifications by level of study in business, management and law

Country	Undergraduate	Postgraduate (<Masters)	Masters	Doctoral	Other
Angola	153	0	14	0	0
Botswana	378	0	37	0	0
DRC	1 280	1 688	6	4	0
Lesotho	5	4	0	0	0
Madagascar	1 856	1 540	96	7	29
Malawi	210	29	9	0	0
Mauritius	418	0	2	0	0
Mozambique	6 698	0	3	0	0
Namibia	1 952	24	2	0	0
Seychelles	No data	No data	No data	No data	No data
South Africa	36 106	8 076	2 621	145	0
Swaziland	497	0	0	0	0
Tanzania	2 004	4	1 612	7	0
Zambia	108	0	5	0	0
Zimbabwe	1 680	123	516	1	0
SADC total	51 489	9 948	4 827	157	0

Table 25 Qualifications by level of study in education

Country	Undergraduate	Postgraduate (<Masters)	Masters	Doctoral	Other
Angola	0	0	0	0	0
Botswana	411	160	54	0	0
DRC	419	188	3	5	0
Lesotho	44	1	2	0	0
Madagascar	0	306	95	0	0
Malawi	253	16	6	0	0
Mauritius	236	0	0	0	0
Mozambique	33 586	0	587	0	0
Namibia	299	182	8	1	14
Seychelles	No data	No data	No data	No data	No data
South Africa	27 390	9 922	444	137	0
Swaziland	100	131	12	0	0
Tanzania	534	45	78	0	0
Zambia	10	0	7	3	0
Zimbabwe	277	20	72	1	0
SADC total	63 559	10 665	1 273	147	14

Table 26 Qualifications by level of study in health sciences

Country	Undergraduate	Postgraduate (<Masters)	Masters	Doctoral	Other
Angola	139	0	0	0	0
Botswana	73	0	2	0	0
DRC	1 518	379	12	5	0
Lesotho	5	0	0	0	0
Madagascar	170	0	0	0	0
Malawi	166	35	15	0	0
Mauritius	0	0	0	0	0
Mozambique	69	0	1	0	1
Namibia	144	96	3	2	0
Seychelles	No data	No data	No data	No data	No data
South Africa	7 198	2 710	1 084	111	0
Swaziland	170	0	0	0	0
Tanzania	809	3	104	3	0
Zambia	7	1	7	0	0
Zimbabwe	219	0	32	0	0
SADC total	10 517	3 224	1 260	121	1

Table 27 Qualifications by level of study in humanities and social sciences

Country	Undergraduate	Postgraduate (<Masters)	Masters	Doctoral	Other
Angola	1 383	0	30	0	0
Botswana	952	0	74	3	0
DRC	1 608	852	34	29	0
Lesotho	65	3	7	2	0
Madagascar	2 102	1 252	74	2	36
Malawi	307	0	34	1	0
Mauritius	334	0	0	0	0
Mozambique	768	0	53	0	0
Namibia	211	56	3	0	0
Seychelles	No data	No data	No data	No data	No data
South Africa	18 429	4 863	2 025	409	0
Swaziland	287	0	2	0	0
Tanzania	2 193	9	285	14	0
Zambia	287	0	11	0	0
Zimbabwe	1 378	27	108	0	0
SADC total	28 202	5 810	2 666	458	0

Table 28 Qualifications by level of study in science, engineering and technology

Country	Undergraduate	Postgraduate (< Masters)	Masters	Doctoral	Other
Angola	532	0	50	0	0
Botswana	480	0	23	5	0
DRC	368	322	16	11	0
Lesotho	19	6	1	0	0
Madagascar	1432	607	424	0	0
Malawi	331	3	12	0	397
Mauritius	562	0	78	10	0
Mozambique	2232	0	5	0	0
Namibia	456	24	4	0	0
Seychelles	No data	No data	No data	No data	No data
South Africa	21962	4245	2215	555	0
Swaziland	63	0	5	0	0
Tanzania	1379	35	228	1	0
Zambia	31	1	4	2	0
Zimbabwe	740	0	50	2	0
SADC total	29155	4636	2691	586	397

Table 29 Qualifications by level of study in other fields of study

Country	Undergraduate	Postgraduate (< Masters)	Masters	Doctoral	Other
Angola	0	0	0	0	0
Botswana	248	0	0	0	0
DRC	0	0	0	4	0
Lesotho	5	5	0	0	0
Madagascar	0	0	0	0	0
Malawi	0	0	0	0	0
Mauritius	54	9	0	0	0
Mozambique	0	0	0	0	0
Namibia	435	0	0	0	0
Seychelles	No data	No data	No data	No data	No data
South Africa	0	0	0	0	0
Swaziland	0	0	0	0	0
Tanzania	92	0	8	0	383
Zambia	1	0	0	0	0
Zimbabwe	238	0	1	0	0
SADC total	1073	14	9	4	383

With respect to the gender of graduates in the SADC region, a total of 55 per cent of graduates are female and 45 per cent male. If South Africa is removed, then the numbers change to 42 per cent female and 58 per cent male graduates.

As was seen with enrolments, the DRC shows the largest gender disparity, with 76 per cent of the graduates in the DRC being male. Interestingly, although Madagascar reported that 83 per cent of the enrolled students were male, only 54 per cent of the graduates were reported to be male. It might be that female students in Madagascar are much more likely to graduate than male students, but it is probably more likely that this unexpected trend is due to missing data from some of the universities in Madagascar. As was seen with enrolments, Mauritius, Namibia, South Africa and Swaziland all report larger proportions of female graduates than male.

When the gender of graduates is compared per major field of study, the results mirror quite closely those of the enrolment trends (see Figure 6). The only difference is a slightly higher percentage (between about 0.5 per cent and 6 per cent) of female graduates compared to female enrolments. This was most marked for health sciences. Although the data do not provide sufficient detail to assess this, one can speculate that the majority of female enrolments in health sciences are in nursing, which typically has a shorter study time than medicine. This might explain why the proportion of female graduates is 6 per cent higher than the proportion of female enrolments for health sciences.

Research outputs

The concerning trend of decreasing quantity and quality of scientific research output within African higher education has been documented in various studies (see for example Abrahams et al. 2008, Mouton et al. 2008). Kotecha (2008b in Abrahams et al. 2008:7) states that:

The tipping point for African research and innovation will not be merely the ability to fully access and use the new abundance of global knowledge and ideas but to make an active and significant contribution to its creation.

Most studies of research output rely on bibliometric analyses of papers published and cited within international indices, such as those of the Institute for Scientific Information (ISI). SARUA has commissioned such studies in the past (Mouton et al. 2008). In this study, universities were asked to provide an indication of the number of research outputs in various categories for the years 2008–2010. It is important to note that, unlike bibliometric analyses, the research output figures provided by the universities are not verified and may or may not reflect accredited research output. Nonetheless, the numbers provide an indication of research output from the perspective of the universities themselves. Several universities were not able to provide this information, which in itself is an interesting finding and points to systematic challenges within universities in the area of research management.

Figure 25 Proportion of graduates by gender per country (percentage)*

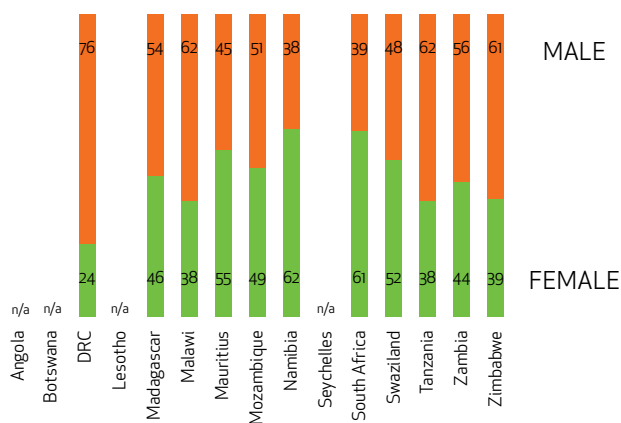
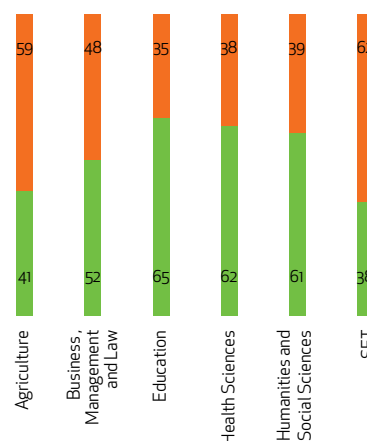


Figure 26 Proportion of graduates by major field of study and gender (percentage)



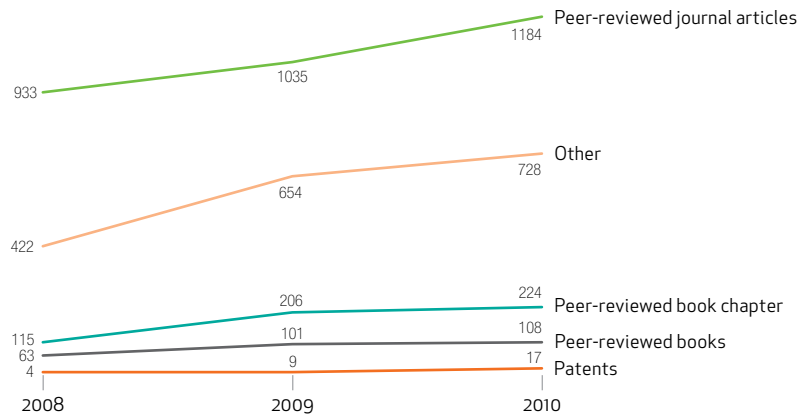
* No data were available for Angola, Botswana, Lesotho and Seychelles

In a 2008 SARUA publication, Mouton et al. (2008:202) reported that South Africa accounted for 79 per cent of the scientific output of the region. In this study the difference between South Africa and the other SADC countries is even more pronounced. However, it is important to note that no research output data were available for Lesotho, Madagascar, Malawi, Mozambique, Namibia (2008), Seychelles and Zambia. In addition, there are other industries and institutions, other than public higher education, that conduct research, for example research councils, research and development departments of private companies, and so on. As such, the figures shown below should be regarded as only a partial picture, focused on understanding the contribution that public higher education appears to be making to the emerging knowledge economy in the region.

Table 30 Research output, selected SADC countries 2008–2010

	Peer-reviewed journal articles	Peer-reviewed books	Peer-reviewed book chapters	Patents	Other	Total
2008						
Botswana	306	22	83	0	139	550
DRC	44	17	10	1	0	72
Mauritius	126	0	3	0	25	154
Swaziland	80	4	1	0	0	85
Tanzania	277	11	6	2	258	554
Zimbabwe	100	9	12	1	0	122
2008 total	933	63	115	4	422	1 537
2009						
Botswana	338	23	97	0	114	572
DRC	22	19	9	2	0	52
Mauritius	95	1	2	0	45	143
Namibia	89	16	28	5	261	399
Swaziland	95	8	14	0	0	117
Tanzania	280	12	11	2	234	539
Zimbabwe	116	17	45	0	0	178
2009 total	1 035	101	206	9	654	2 005
2010						
Botswana	347	28	102	0	206	683
DRC	47	20	9	5	0	81
Mauritius	188	1	7	0	45	241
Namibia	98	10	29	7	288	432
Swaziland	98	10	16	0	0	124
Tanzania	260	17	11	4	249	541
Zimbabwe	146	22	50	1	0	219
2010 total	1 184	108	224	17	728	2 261

Considering only the seven SADC countries included in Table 30 (for which research output data were available), there is some evidence that the quantity of research products might be increasing over time, although the data provide no indication of quality. What is concerning is that year-on-year, at least one-third of the outputs reported by universities in these seven countries fell into the 'other' category, which includes conference papers/proceedings, consultancy or project reports, media articles and textbooks – types of research output that do not necessarily contribute to overall knowledge development.

Figure 27 Self-reported research output for Botswana, DRC, Mauritius, Namibia, Swaziland, Tanzania and Zimbabwe (no. of research outputs, 2008–2010)

Audited research output data, published by the South African Department for Higher Education and Training, were available for 2008 and 2009. These data were not included in the tables and figure above because they were not based on responses of the universities, but drawn from the national data system. In addition, the numbers refer to research units and not actual publications. Nonetheless, comparing the numbers in Tables 30 and 31 highlights the vast disparity in research output from South Africa compared to other SADC countries.

Table 31 Research output of South African universities 2008–2009 (in research units)

Category of research output	2008	2009
Peer-reviewed journal articles	7 638.17	8 256.61
Peer-reviewed books and book chapters	266.43	376.71
Patents	No data	No data
Proceedings	448.76	476.02

Despite the overall low levels of research output reported by universities in the region, 81 per cent of the universities that submitted a questionnaire response reported having a person or office responsible for research development, and 76 per cent report that the university has a research plan or strategy. A smaller percentage, 52 per cent, regarded themselves as research-intensive universities.

Conclusions

A wealth of data have been presented in this section of the review that focuses on profiling public higher education in the SADC region. Where possible, the trends shown in the data collected for this study were compared with the data collected in SARUA's previous higher education profiling study in an attempt to start the process of tracking longitudinal data about higher education in the region.

Based on the available data it can be concluded that there appears to have been some growth in the public higher education sector between 2006 and 2010, in terms of the number of public universities, private higher education institutions, enrolled students, graduates and research outputs. This growth is promising and potentially opens up new opportunities for public higher education to contribute to the development of the region. Despite the growth, the demand for places at public universities in the region continues to outstrip supply by a large margin, and it is argued in

this section that it is unlikely that public higher education will be able to meet this demand. The importance of building the private higher education sector in the region thus emerges as an important consideration, as is the need to better understand the current size and shape of the private sector.

The profile data also highlighted the fact that SADC higher education is largely provided at the undergraduate level with the greatest number of enrolled students and graduates being found in business, management and law and the humanities and social sciences. While these fields of study have an important contribution to make in society and in the region, it is concerning to note the relatively smaller regional focus on science and technology, and, indeed, the decline in the proportion of students enrolling and graduating in these fields. This trend, together with the overall low levels of research output, is likely to have a negative impact on the development of each country and the region as a whole.

5

Balancing national and regional realities

The challenges of collecting higher education data in support of regionalisation

There continues to be a fine line between competition and collaboration amongst higher education institutions. While higher education institutions in a system at the national level, and to some extent at the regional level, continue to compete for the same number of well-qualified students, financial and human resources and recognition, there is a general acknowledgement among higher education managers and academics that collaboration and co-operation remain an important aspect in overcoming challenges at institutional and system levels. Looking at international examples (for example Bologna, Erasmus, U-Map), the success of most higher education systems has been the ability to adapt to reflect market needs through collaboration and partnering on the basis of shared strengths and abilities.

In the face of the forces of globalisation and the weakening of national boundaries, higher education systems must be able to respond to a variety of challenges. A key aspect of this response has been the development of policies, agreements and academic protocols between multiple countries aimed at breaking down barriers and addressing the challenges which have once limited the capacity of these institutions to maximise their teaching, research and knowledge production resources. Marginson (2011) has identified four conditions required for the successful regionalisation of higher education: 'adequate national wealth and educational infrastructure; geographical proximity; some cultural commonality; and political will' (2011:21). He argues further that only Europe appears to have these four conditions in place.

Given the data presented in this review, together with Volume 2 that presents national higher education profiles, it seems reasonable to conclude that in the SADC region only political will and cultural commonality – to some extent⁸ – seem to be in place. For example, in this study all but two ministries of education reported that the SADC protocol had been considered to some extent in their national policy and planning processes. When ministries were asked to rate the importance of regional collaboration on a scale from 1 (not at all important) to 5 (extremely important), the average rating across the region was 4, with the majority of countries selecting either 4 or 5 as their choice. Only the DRC selected option 2, indicating that regional collaboration is considered of less importance for this country. With many of the SADC countries facing high levels of poverty and low levels of human development (UNDP 2011a), together with relatively poorly-resourced education and higher education systems, the region as a whole does not yet satisfy the condition of adequate national wealth and educational infrastructure. Meeting this condition is further complicated by the fact that the data about (higher) education in the region are still inadequate. The SADC region is

8 For example, Ngwenya (2011) argues that regional programmes are not mainstreamed within national processes and as a result, despite regional agreements and protocols being in place, there is often little change evident on the ground.

made up of anglophone, francophone and lusophone countries that use these languages together with various indigenous languages and, despite cultural commonality in a historical sense, in practical terms this commonality does not really exist at the regional level, or only exists between certain countries. Kotecha (2012:15) states that although there are links and common ties amongst the peoples of Southern Africa, 'these links and common experiences do not necessarily translate into a strong regional identity or a sense of social cohesion'. Lastly, the region covers a relatively large geographical area, with some of the countries being islands, which undermines the condition of geographical proximity.⁹

As a result, evidence from Africa and the SADC region reveals that it is more common to find collaborative partnerships between countries and their previous colonial counterparts, sometimes at the expense of South-South partnerships. In the SADC Protocol Review (2007:92) this point was articulated, based on a number of surveys that showed that 'more than 80 per cent of sub-Saharan universities were inadequately connected' and hence collaborated insufficiently. Sometimes this is due to language issues, since French-speaking academics prefer to collaborate with other French-speaking academics, and most often in the North. This also applies to Portuguese-speaking researchers and thus limits the level of regional partnership and collaboration. Research findings (Boschoff 2010) from 15 SADC countries reveal that only 3 per cent of papers produced between 2005 and 2008 were co-authored by researchers from two or more SADC countries, and only 5 per cent were jointly authored by African academics. From the study, 47 per cent of scientific papers were co-authored with scientists from high-income countries (Boschoff 2010:500), showing a significantly lower level of South-South collaboration on the continent and quite dismal collaboration between countries in the SADC region specifically. Similarly, it was shown in Chapter 4 that there is relatively little mobility of staff and students within the SADC region. Tables 5 and 15 highlighted that there is a greater proportion of international students and staff members within SADC universities that come from countries outside SADC than there are from within SADC itself. The data also showed that several countries in the region do not yet have well-functioning quality assurance systems, which are needed to facilitate credit transfer and the recognition of qualifications within the region. As such, based on the findings presented here, there appears to be little evidence of the emergence of a strong regional higher education system.

Nonetheless, as was noted at the outset of this review, a regional technical committee for higher education in the SADC region was established in June 2012, and it is hoped that this committee will become a catalyst for the revitalisation of the regional potential of higher education. While many lessons can be learned by this committee from the experiences of higher education in other regions of the world, research and experience have also highlighted that 'while there are some universal mechanisms, what is found to be effective in practice is highly contingent on regional and national circumstances' (Kotecha 2012:30). For this reason, both national and regional higher education data are critical to the project of regional integration in the higher education sector. In the absence of high-quality regional data, the planning role of this committee is likely to be compromised. Having conducted two profiling studies of public higher education in all 15 SADC countries, SARUA and the research teams that have conducted the research are uniquely positioned to provide recommendations that could enhance the work of this new technical committee.¹⁰ The focus of this chapter now turns to issues of regional higher education data and data collection.

Improving regional higher education data

In the introduction it was noted that there are various initiatives underway to improve regional data collection processes, including the development of a set of indicators for monitoring SADC's regional implementation plan for education and training. Recent initiatives include the work led by ADEA focused on assessing the current status of EMIS systems as well as a study by UNESCO looking at quality of education data in SADC (ADEA WGEMPS 2009, UNESCO 2010). It is worth

9 The condition of geographical proximity might also explain the DRC's lower rating of the importance of regional collaboration in the context of the SADC region.

10 SARUA's work in the area of regional integration has not been limited to profiling as is seen in the 2012 publication *Perspectives on Regional Identity and the Role of Higher Education in Southern Africa*.

summarising some of the main findings and issues raised in these reports and in the resultant implications for capacity-building strategies for the region, as they provide important guidelines for the collection of regional higher education data. The lessons learnt from these studies, together with reflections drawing on the experience of gathering this profiling data, are presented in four sub-sections below, which deal respectively with resourcing, methodologies, quality and mandates.

Resourcing

The importance of ensuring sufficient resources – human, technical and financial – to support an educational data management system is emphasised as a key element for ensuring the quality of data collected (SADC 2009, UNESCO 2010). The management of data systems, such as EMIS (and arguably SARUA's higher education-level data gathering even though the scale is different), requires skills in data collecting, storing, integrating, processing, organising, output and marketing in a timely manner, and ensuring reliability and quality. Eight of the 14 countries (including South Africa) reported during the EMIS assessment study that they do not have enough staff members for effective EMIS functioning, and only half of the countries reported having the necessary equipment in place (SADC 2009). Except for Botswana, South Africa and Tanzania, it was noted that most ministries of education rely on external financial support for EMIS equipment, software and capacity-building (SADC 2008).

This shortage of resourcing for running EMIS systems at a national level is likely to be evident at the institutional level as well, and was certainly in evidence during the collection of the data for this study. Participating universities were asked whether they had institutional research offices, and 74 per cent of the responding universities responded in the affirmative. However, it is probable that responses were more likely to be received from universities that had offices processing institutional information, and that universities without such capacity may not have been in a position to submit a completed questionnaire. Half the universities that responded reported that there was a centre or researcher(s) at the university whose research was focused on higher education issues. In some instances names and contact details were provided, and this information provides a basis for building a higher education research community in the SADC region.

Methodologies

Lessons relevant to methodology can be drawn from two levels of the EMIS assessment report: (1) the methodology used in gathering the data for the EMIS assessment study itself, and (2) the methodologies of in-country data collection that were reported by ministries of education in their questionnaire responses. The questionnaire used in the EMIS assessment study was completed by all 14 of the participating ministries of education, i.e. the response rate was 100 per cent. However, the time taken to receive completed questionnaires was approximately one year. Of the 14 countries, 11 completed the questionnaires digitally, two sent hard copies, and one country submitted a scanned version of a survey completed by hand. Thus, while the majority of ministries in the EMIS assessment study completed the questionnaire digitally, it appears to remain difficult for some countries to make use of digital interfaces (email or Internet).

With respect to data gathering within countries during the EMIS study, nearly all the countries reported that in some cases education institutions did not provide the data requested, even where data reporting was sanctioned in policy or legislation (SADC 2008:7).

Similar trends were seen during the data collection phase of this profiling study. Several countries and institutions found it difficult to send and receive digital files due to bandwidth constraints, and in several cases faxes had to be used. One institution submitted their hand-written questionnaire via courier service. As occurred in the EMIS study, several institutions participating in this study did not submit data, or submitted questionnaires that were partially completed.

Given these challenges, it is unlikely that comparable higher education data collection will become part of standard national statistical reporting in the near future. Collection of regional profiling data in the short term will thus most likely need to be done on a project basis, as was the case in this study.

Quality

The data quality assessment framework (DQAF) used in the UNESCO (2010) study is useful to consider in relation to SARUA's higher education profiling work, and particularly in contemplating the scale at which SARUA decides to work. The DQAF highlights the complexity of gathering quality data, as well as the current lack of capacity regionally in this area. The table below summarises the data quality assessment framework used. Although the DQAF is applied at a country level, the implications are also relevant at the institutional and regional levels, as was the case in this study.

Table 32 Summary of DQAF quality dimensions (UNESCO 2010:8-9)

Quality dimensions	Sub-dimensions (data quality questions)
Prerequisites	<ul style="list-style-type: none"> • Is there a legal and institutional environment to support a statistical system? • Are there sufficient resources, both human and technical, to support a statistical system? • Is there a culture of data quality?
Integrity	<ul style="list-style-type: none"> • Are data collection, analysis and dissemination processes guided by professional principles? • Are statistical policies and practices transparent? • Are ethical standards used to guide policy development and staff?
Methodological soundness	<ul style="list-style-type: none"> • Do education concepts and definitions comply with standard statistical frameworks? • Are the data produced comprehensive and follow international norms? • Are the data categorised and classified in a manner consistent with international standards and best practices? • Are the data recorded according to internationally accepted standards, guidelines or good practices?
Accuracy and reliability	<ul style="list-style-type: none"> • How comprehensive are the data sources used to compile statistics? • Are education data and statistics validated against different data sources? • Are there sound, well-documented, statistical techniques in place? • Are data sources regularly assessed and validated?
Serviceability	<ul style="list-style-type: none"> • Are the statistics relevant and timely? • Is there a predictable revision policy? • Are the data consistent within a dataset and over time?
Are the data easily available?	<ul style="list-style-type: none"> • Are the data disseminated in an adequate and impartial manner? • Are there adequate metadata to describe data completely? • Is there a focus on assisting the user?

As noted above, these quality criteria have been developed for application at a country level and so apply to national EMIS systems. It is unlikely that an organisation like SARUA would be able to achieve this level of data quality when collecting data on a project basis and with limited budgets. Nonetheless, these criteria should be seen as a guide to the collection of all regional higher education data. Ultimately, once the SADC EMIS process is completed, it will become simpler to compile higher education data collected at national levels as part of national EMIS reporting systems. However, this is a long-term goal, given the extent of challenges currently faced with respect to the collection and quality of higher education data.

The performance of the seven SADC countries that participated in the regional DQAF process, as well as the quality of the data provided by universities in this study, highlighted the long journey ahead towards data quality in the region.

Mandates

One of the biggest challenges facing effective EMIS in the SADC region is 'data blanks' or incomplete statistical reporting. This is a problem of inadequate data coverage of both all education institutions (both public and private) and all the subsectors in the education system. At the source of this problem is the inadequate existence of comprehensive EMIS policies that address the legal requirements of all education and training institutions to provide timely, accurate data (SADC 2009:4).

It is critical that governments establishes [sic] a specific national policy on EMIS which gives the mandate to Ministries of Education to insist that all educational institutions are registered with them, provide them with appropriate educational data on request, and follow rules and regulations as promulgated by the Ministries in order to establish an effective EMIS system that monitors the implementation of national and international policy frameworks (SADC 2008:6).

The quotations presented above highlight the challenges currently experienced regarding formally defined and legislated mandates for data collection at national levels, and even more so at the regional level. The central importance of ensuring that clear mandates are in place and agreed to is emphasised in the SADC reports on EMIS data, the OECD data quality processes and also the UNESCO DQAF. When considering issues of mandate, it is necessary to consider, firstly at a broad (regional and national) level, whether there is a policy framework for data reporting. Across regional, national and institutional levels, the roles and responsibilities of all players participating in the data processes should be clearly explicated (UNESCO 2010). To ensure that a culture of quality data reporting is developed, it is essential that all parties clearly understand the value of the process and how the reporting of data impacts on and benefits their practice. While the newly established technical committee on higher education in the SADC region might provide the basis through which such mandates could be formalised, the issue of mandate has been a serious challenge in the profiling work conducted to date.

SARUA is a membership-based organisation and at present there are 60 universities that are members of the organisation. As noted earlier, the profiling work conducted for this study pointed to the existence of at least 108 public universities in the region. Although all public universities that the research team could identify – whether members of SARUA or not – were approached to participate in the study, non-members did not always know of the organisation, were unsure of how the data would be used, and were thus sometimes wary of participating in the study. In an attempt to begin formalising a mandate for gathering institutional data across the region, SARUA requested signed statements of support from the 15 ministries of education at the outset of the study. As noted in Chapter 2, signed statements were received from 8 of the 15 ministries.

Also relevant in the context of establishing mandate is that the reporting burden on institutions should not be excessive, but should be proportionate to the needs of the users of the information (SADC 2009:16). In a useful guide on working with EMIS prepared for DFID, Ellison presents as one of six good practices in EMIS that the focus should be on speed and not comprehensiveness, that statistical systems tend to be over-designed, and that systems with the highest use tend to be those that are 'simple and modest in scope' (Ellison 2004). The extent of reporting should also be clearly agreed to when formalising mandates and data collection, analysis and reporting procedures.

Recommendations for future research

This section presents a summary of the areas of challenge noted during the data collection and processing for this higher education profiling study. Together with the identification and description of specific challenges, recommendations are presented for future regional higher education profiling studies.

Table 33 Summary of research challenges and recommendations for future research

Area of challenge	Brief explanation
Mandate and identifying respondents	<p>In some instances it was difficult to establish the mandate to collect institutional-level data. This was particularly the case where universities were not formally SARUA members. In addition, making contact with the most appropriate person(s) at each ministry and each university was particularly difficult. The starting point in this study was the permanent secretary in the ministry and the vice-chancellor's office at the universities, but often these offices were not themselves able to provide data and the researchers were referred to various other departments and persons.</p>
Data verification and validation	<p>In many instances data submitted by universities were inaccurate or contained inconsistencies.</p> <p>Given the budget constraints of the study, it was not possible to audit or formally verify the data provided by the universities.</p>
Defining comparable units of analysis	<p>In some instances it was found that participating universities adopted different understandings of the categories included in the questionnaire, despite a comprehensive definition section being included at the start of the questionnaire.</p>
Finding an appropriate reference year	<p>The questionnaires used in this study asked for data for the most recent completed academic year (2009/2010 depending on the academic calendar used in the country). It is assumed that there is a time lag with the processing of institutional and national data. Since data collection for this project commenced in 2011, the 2009/2010 academic year was judged to be the most recent year for which data were available. However, it was necessary to extend the data collection timeframe due to slow response from some universities and this impacted on the most recent year for which data were available.</p>

Mechanisms employed to overcome the challenge during this study

Recommendations for future regional-level higher education profiling

Formal, written communication was sent to each ministry of education and each university from the CEO of SARUA at the outset of the study. A digital copy of SARUA's 2008 Study Series was included to show how the data would be used and to emphasise the value of the study for each university, country and the region more broadly. Ministries of education were requested to consider signing a statement of support for the study (prepared in advance by the research team). Where this was done (eight countries) the signed statement was included with the initial communication to the universities in the country as evidence of national support for the study.

It is difficult for a membership organisation such as SARUA to establish a mandate for comprehensive regional profiling that also includes non-members. It is thus recommended that future profiling work be done, as far as possible, in formal partnership with SADC structures, such as the Technical Committee on Higher Education, which would provide targeted access to the most appropriate people within each ministry of education. The establishment of in-country research teams comprising local researchers would also assist in building trust and provide a more nuanced understanding of national higher education contexts. The financial implications of this, of course, need to be balanced with the practicalities of collecting regional data.

A verification spreadsheet was prepared that automatically calculated totals and indicated areas of error for follow-up with the university or ministry in question. In some cases the numbers in one question were corrected, but new errors were introduced in another. Further verification and follow-up was then needed. Despite these processes it was not possible to resolve all data inconsistencies. Some universities did not respond to verification requests and in some cases the data were the best possible estimate that could be made by the university.

As noted in earlier sections of this review, there is limited capacity across the region with respect to institutional research. This is not the case at all universities, or in all countries, but on the whole, capacity is lacking. As such, it is likely that institutional data will continue to contain errors. Without a specific regional data collection mechanism that is used on an ongoing basis, it is likely that data errors will occur in research projects of this nature.

Ideally there should be formal data validation processes, such as verification visits to a sample of institutions, for example. However, the budget implications of this are immense and it is unlikely to be a feasible approach in the short to medium term.

As far as possible this was corrected during data verifications. However, when working across different countries, some of which have national reporting procedures and some that do not, as well as some systems based on the English higher education system, some on the French system, and some on the Portuguese system, it is not always possible to resolve these issues completely.

It is recommended that future studies consider preparing a simple manual for data collection. It seems that the definitions placed at the start of the questionnaire may not be considered at the time of compiling the data. The use of a spreadsheet for data collection that includes definitions closer to the point of data entry may be helpful.

Where data were provided from a different academic year, it has been noted as such in the national level reports (see Volume 2). At the regional level, the data were compiled and assumed to represent 2010. However specific notes about the limitations of this assumption are included in the methodology section and it was noted that the profile presented should be seen as the best estimate of the state of public higher education at this time.

Future research should plan on at least a twelve-month data collection timeframe to allow sufficient time for several follow-ups on outstanding data, as well as verification where inconsistencies are found. Assuming at least a twelve-month data collection period, the most appropriate reference year should be identified. Space should be provided on the data collection sheet (questionnaire or spreadsheet) for universities to make a note where data provided do not correspond to the reference year in question. This can then be factored into the analysis and reported as such.

6

Conclusions

This volume of SARUA's 2012 profile of higher education in the Southern African region covers a great deal of ground. The presentation of the higher education profile has been positioned within a larger argument about the importance of building regional higher education data collection systems and procedures to form the foundation from which regionalisation of the sector, in support of broader regional development processes, can progress. Following a discussion of the research methodology of the study, a literature review was presented, focusing on the challenges and opportunities facing higher education in Southern Africa. The literature review provided important background information to assist with the interpretation and understanding of the profile data that constitute the bulk of the review.

The profiling data pointed to some growth in the regional higher education sector between 2006 and 2010. The study identified 109 public universities, 526 publicly funded technical universities or colleges and 456 privately funded higher education institutions. Despite the fast growth in the number of private universities in the region, the majority of students in the region are still studying within the public university sector. The data highlighted the large demand for places at universities, a demand that the regional public sector is unlikely to be able to meet. It was thus recommended that greater attention be paid to researching and understanding private higher education, as this sector could make an important contribution to the development of the region.

Based on the available data, it is estimated that there are approximately 1.3 million students enrolled in public universities across the region. South Africa remains the largest provider, followed by the DRC, Tanzania, Mozambique, Angola and Madagascar. When aggregated across the region, there is an almost even spread of male and female students. However, large gender disparities were identified in some countries. Nationally, and regionally, female students continue to be under-represented in science, engineering and technology fields.

The relative distribution of students in the region by major field of study has remained fairly consistent from 2006 to 2010, although there has been some increase in the absolute number of enrolments. The fields of business, management and law, followed by the humanities and social sciences enrol the largest numbers of students. Concerns were noted about the need to expand both enrolment and graduation in the science, engineering and technology fields. The regional university system is overwhelmingly skewed towards undergraduate education, with masters and doctoral degree enrolments accounting for only 12 per cent of the total enrolment and 7 per cent of graduations. These figures are very low, given the need to position higher education as a key driver of national and regional knowledge economies.

Despite growing recognition of the need to expand higher education enrolment, the study pointed to serious infrastructural constraints in various areas. Across the region, universities reported shortages in the quantity and quality of student support services, as well as a lack of teaching and learning infrastructure. In most instances it was reported that while teaching and learning infrastructure is mostly available, it is often insufficient to meet the needs of all enrolled

students. Shortages in the area of student accommodation were also commonly reported.

Effective regionalisation depends on, amongst other things, national quality assurance systems that form the basis for credit transfer and recognition. The data collected in this study showed that, while the majority of countries either have a national quality assurance system in place or in development, there are countries that have not made much progress in this area. A total of 83 per cent of the participating universities reported having internal quality assurance procedures in place, but only 56 per cent have budget available to support quality assurance work. It was somewhat concerning to note that only 69 per cent of the universities that submitted responses reported making use of external examination procedures.

With respect to higher education outputs – graduates and research – the study confirmed several other studies that have highlighted the relatively low research output and knowledge production in the region. The regional graduate profile is even more skewed towards the undergraduate level than the enrolment profile, with undergraduate qualifications accounting for 79 per cent of all graduations in the region. This number increases to 88 per cent if South African graduates are removed, since the vast majority of postgraduate training in the region takes place at South African universities. Also concerning to note was that the proportion of graduates in science, engineering and technology decreased between 2006 and 2010.

Lastly, the profile data point to relatively low levels of student and staff mobility in the region. Much of the movement that does take place involves movement to South Africa from other SADC countries. On the whole, in most countries there are larger numbers of international staff members from outside the region than from within. This has implications for locally relevant knowledge production.

In conclusion, it should be reiterated that higher education, as one of the main sources of knowledge production, continues to play a significant role in socio-economic and human development as well as in efforts to strengthen democracy across the SADC region. For the full potential of higher education to be achieved there is a need for evidence-based policies for higher education and development planning at national and regional levels, based on high-quality longitudinal data. SARUA has already made great strides in this direction through its profiling studies, and longitudinal data about higher education in the region is thus starting to emerge. However, the need for more formalised regional higher education data gathering and processing mechanisms has been highlighted, and the review provides specific recommendations in this regard.

It remains important that all stakeholders come together in a sustained endeavour to ensure that the SADC region is equipped to respond to the demands of the global knowledge economy through high-quality higher education institutions, improved outputs, and a growth in relevant and high-quality regional knowledge production.



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Appendix

Socio-economic overview of SADC member countries

Country context data were obtained from a variety of sources, including: CIA (2012), Lesotho Bureau of Statistics (2012), SADC (2007), Tanzania National Bureau of Statistics (2012), UNAIDS (2011), UNDP (2011), UNESCO Institute for Statistics (2011).

Country	Key statistics
 Angola	<p>Population: 19.6 million (2011) GDP per capita: US\$6 000 (2011) Human development index: 0.486 Unemployment levels: >50% (2011 est.) Key economic sectors: oil and gas, trade and commerce, services, agriculture, forestry, fishing Principal exports: crude oil, diamonds, refined petroleum products, coffee, sisal, fish and fish products, timber, cotton HIV and AIDS prevalence: 2% (2009) Gross primary enrolment ratio: 124% (2010) Gross secondary enrolment ratio: 31% (2010) Gross tertiary enrolment ratio: 14% (2010)</p>
 Botswana	<p>Population: 2.0 million (2011) GDP per capita: US\$16 200 (2011) Human development index: 0.633 Unemployment levels: 17.8% (2010 est.) Key economic sectors: mining, manufacturing, agriculture, tourism Principal exports: diamonds, copper, nickel, soda ash, meat, textiles HIV and AIDS prevalence: 24.8% (2009) Gross primary enrolment ratio: 110% (2009) Gross secondary enrolment ratio: 82% (2009) Gross tertiary enrolment ratio: 7% (2006)</p>

Country	Key statistics
 Democratic Republic of the Congo (DRC)	<p>Population: 67.8 million (2011 est.) GDP per capita: US\$451 (2010 est.) Human development index: 0.286 Unemployment levels: not available Key economic sectors: agriculture and forestry, services, mining, manufacturing Principal exports: diamonds, gold, copper, cobalt, wood products, crude oil, coffee HIV and AIDS prevalence: 1.6% (2009 est.) Gross primary enrolment ratio: 94% (2010) Gross secondary enrolment ratio: 38% (2010) Gross tertiary enrolment ratio: 6% (2009)</p>
 Lesotho	<p>Population: 2.2 million (2011) GDP per capita: US\$981 (2010) Human development index: 0.450 Unemployment levels: 25.3% (2008) Key economic sectors: clothing and textiles, agriculture, manufacturing, tourism Principal exports: clothing and textiles, manufacturing, food and live animals, wool and mohair HIV and AIDS prevalence: 23.6% (2009) Gross primary enrolment ratio: 103% (2010) Gross secondary enrolment ratio: 46% (2010) Gross tertiary enrolment ratio: 4% (2006)</p>
 Madagascar	<p>Population: 21.3 million (2011) GDP per capita: US\$422 (2010) Human development index: 0.480 Unemployment levels: 50% (2004 est.) Key economic sectors: mining, agriculture, industry, tourism Principle exports: coffee, vanilla, shellfish, sugar, cotton cloth, clothing, chromite, petroleum products HIV and AIDS prevalence: 0.2% (2009 est.) Gross primary enrolment ratio: 149% (2010) Gross secondary enrolment ratio: 31% (2009) Gross tertiary enrolment ratio: 4% (2010)</p>
 Malawi	<p>Population: 15.4 million (2011) GDP per capita: US\$357 (2010) Human development index: 0.400 Unemployment levels: not available Key economic sectors: agriculture Principal exports: tobacco, tea, sugar, cotton, coffee, peanuts, wood products, apparel HIV and AIDS prevalence: 11% (2010 est.) Gross primary enrolment ratio: 119% (2006) Gross secondary enrolment ratio: 32% (2010) Gross tertiary enrolment ratio: 1% (2010)</p>
 Mauritius	<p>Population: 1.3 million (2011) GDP per capita: US\$7 488 (2010) Human development index: 0.726 Unemployment levels: 7.8% (2011) Key economic sectors: agriculture, tourism, manufacturing, financial services Principal exports: clothing and textiles, sugar, molasses, fish, cut flowers HIV and AIDS prevalence: 1% (2010) Gross primary enrolment ratio: 111% (2010) Gross secondary enrolment ratio: 89% (2010) Gross tertiary enrolment ratio: 25% (2010)</p>

Country	Key statistics
 Mozambique	<p> Population: 23.9 million (2011) GDP per capita: US\$1 100 (2011) Human development index: 0.322 Unemployment levels: 21% (1997 est.) Key economic sectors: mining, agriculture, industry, tourism Principle exports: aluminum, prawns, electricity, cashew nuts, sugar, citrus, cotton, timber HIV and AIDS prevalence: 11.5% (2010 est.) Gross primary enrolment ratio: 111% (2011) Gross secondary enrolment ratio: 26% (2011) Gross tertiary enrolment ratio: 1% (2005) </p>
 Namibia	<p> Population: 2.3 million (2011) GDP per capita: US\$6 700 Human development index: 0.625 Unemployment levels: 51.2% (2008 est.) Key economic sectors: mining, agriculture, industry, tourism Principle exports: diamonds, copper, gold, zinc, lead, uranium, cattle, processed fish, karakul skins HIV and AIDS prevalence: 13.3% (2009 est.) Gross primary enrolment ratio: 107% (2008) Gross secondary enrolment ratio: 104% (2007) Gross tertiary enrolment ratio: 9% (2008) </p>
 Seychelles	<p> Population: 0.9 million (2006) GDP per capita: US\$11 451 (2006) Human development index: 0.773 Unemployment levels: 2% (2006 est.) Key economic sectors: fishing, tourism, agriculture, beverages Principal exports: canned tuna, frozen fish, cinnamon bark, copra, petroleum products HIV and AIDS prevalence: not available Gross primary enrolment ratio: 117% (2006) Gross secondary enrolment ratio: 119% (2010) Gross tertiary enrolment ratio: not available </p>
 South Africa	<p> Population: 50.6 million (2011) GDP per capita: US\$10 973 Human development index: 0.619 Unemployment levels: 24.9% (2011) Key economic sectors: services, tourism, mining, manufacturing, agriculture, forestry and fishing, utilities Principal exports: metals, gold, diamonds, machinery, transport equipment HIV and AIDS prevalence: 17.5% (2009) Gross primary enrolment ratio: 107% (2002) Gross secondary enrolment ratio: 90% (2002) Gross tertiary enrolment ratio: 15% (2006) </p>

Country	Key statistics
 Swaziland	<p>Population: 1.1 million (2011) GDP per capita: US\$3 311 (2010) Human development index: 0.522 Unemployment levels: 40% (2006 est.) Key economic sectors: manufacturing, tourism Principal exports: soft drink concentrates, sugar, wood pulp, cotton yarn, refrigerators, citrus, canned fruit HIV and AIDS prevalence: 25.9% (2009 est.) Gross primary enrolment ratio: 116% (2010) Gross secondary enrolment ratio: 58% (2010) Gross tertiary enrolment ratio: 4% (2006)</p>
 Tanzania	<p>Population: 46.2 million (2011) GDP per capita: US\$516 (2010) Human development index: 0.466 Unemployment levels: 10.7% (2011) Key economic sectors: mining, agriculture, manufacturing, tourism Principal exports: gold, coffee, cashew nuts, manufactured goods, cotton HIV and AIDS prevalence: 5.6% (2009 est.) Gross primary enrolment ratio: 102% (2010) Gross secondary enrolment ratio: 6% (1999) Gross tertiary enrolment ratio: 2% (2010)</p>
 Zambia	<p>Population: 13.5 million (2011) GDP per capita: US\$1 238 (2010) Human development index: 0.430 Unemployment levels: 14% (2006 est.) Key economic sectors: mining, agriculture, manufacturing, tourism Principal exports: cobalt, copper, cotton, flowers, electricity HIV and AIDS prevalence: 13.5% (2009 est.) Gross primary enrolment ratio: 115% (2010) Gross secondary enrolment ratio: 28% (2002) Gross tertiary enrolment ratio: 2% (1999)</p>
 Zimbabwe	<p>Population: 12.8 million (2011) GDP per capita: US\$573 (2010) Human development index: 0.376 Unemployment levels: 95% (2009 est.) Key economic sectors: agriculture, mining, tourism Principal exports: platinum, cotton, tobacco, gold, ferroalloys, textiles/clothing HIV and AIDS prevalence: 14.3% (2009 est.) Gross primary enrolment ratio: 101% (2006) Gross secondary enrolment ratio: 40% (2006) Gross tertiary enrolment ratio: 6% (2010)</p>

A Profile of Higher Education in Southern Africa – Volume 1: A Regional Perspective makes a significant contribution to the knowledge base on higher education in the SADC region. It provides vital information for decision makers at inter-governmental, national and institutional levels that can be used for purposes of analysis, planning and advocacy.

This volume documents the latest data that SARUA has gathered on public higher education institutions in the SADC region, and contains some exploratory information on private higher education institutions. In so doing, it builds on SARUA's first profiling study published in 2008, *Towards a Common Future: Higher Education in the SADC Region*. The study provides wide-ranging data in all 15 SADC countries, making it possible to track national outputs and draw cross-national comparisons. The growth of higher education provision is evidenced, the pressing demand for access is documented, and important challenges pertaining to planning, funding and innovation are foregrounded.

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