Higher Education in the Southern African Region:

Current trends, challenges, and recommendations

A contribution to the development of a regional strategic plan for revitalising and strengthening higher education in the SADC region

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Executive summary

Although there is an increasing demand for higher education in the Southern Africa region, levels of higher education provision and enrolment rates in the Southern African Development Community (SADC) countries are amongst the lowest in the world. While the SADC region's tertiary enrolment was on par with other parts of the world in the 1970s, by 2010 enrolment in those regions had risen by more than 20 per cent and Southern Africa was falling behind.

If SADC countries continue along their current higher education trajectory without making significant changes, the region is projected to achieve a 16,3 per cent higher education enrolment rate by 2050. This progress is insufficient when compared to the *current* global gross tertiary enrolment ratio of 30 per cent, and will erode the future of higher education institutions in the region.

The SADC region has invested heavily in education since 1970. SADC countries spend between 4,5 and 5 per cent of GDP annually on education, which is on par with UNESCO's recommendation (6 per cent of the GDP). By 2010, the SADC region was spending more on education than any other region in the world. SADC also invests more per student than other countries that have a similar level of educational achievement and income. However, an analysis of government spending going to education, rather than education spending as a percentage of GDP overall, shows that most of the investment went towards primary education and less on higher education. As a result, higher education enrolment outcomes reflect poorly on the education investment made. Because increased demand for higher education has not been matched by increased levels of funding, the quality of higher education in the SADC region has deteriorated and the number of academic staff has declined.

Higher education systems in the SADC region are elite systems in which demand has outstripped capacity and registrations in the fields of science, engineering and technology are relatively low. Unless the SADC region changes its higher education strategy, by 2050 SADC countries will fall even further behind other regions in Africa and the world in respect of tertiary enrolment rates.

Imperatives for change

Four imperatives emerge for achieving a step-change in higher education development in the SADC region:
- Adopt a **strategic, targeted and differentiated approach to the expansion of higher education enrolments** at all levels of the higher education pipeline (undergraduate as well as postgraduate study).
- **Strengthen the quality of teaching and learning** in higher education institutions by increasing the qualifications of faculty, producing at least double the number of Masters and doctoral graduates, and retaining these skills within the universities.
- **Change how universities work** in two respects: the first is to strengthen governance, leadership and management, and introduce management information systems to improve the effectiveness of higher education planning and expenditure; the second is to strengthen scholarship through interdisciplinary practice and collaboration for innovation.
- Plan how **universities develop their research capability**. Will they develop research activities in order to achieve a good mix of applied research, a focus on direct technology transfer as well as

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basic research with long-term potential for innovation? Will they explicitly link postgraduate and doctoral education to research?

Ten strategies for expanding and transforming higher education in the SADC region

SARUA's research and the consultations held with higher education leaders and policy-makers throughout the region have produced a number of findings, insights and recommendations for revitalising and strengthening higher education in SADC countries.

	Strategy	Recommendations to Ministers of Education
1	Scale up and modernise the higher education system through ICT infrastructure.	Champion and resource the formation of a National Research and Education Network (NREN) in each country and work closely with counterparts in Telecommunications who control resources such as network capacities and licences.
2	Increase the effectiveness of higher education planning.	Prioritise the building of institutional research capacity and management information systems to support higher education planning in-country and across the region.
3	Develop academic quality.	Strengthen investment in postgraduate education to increase the doctoral qualifications of academics.
4	Increase mobility of staff and students across the region.	Create a scholarship fund to strengthen and deepen collaboration between countries and institutions for the development and sharing of academic resources and capacities through innovative staff exchanges, twinning or co-badging of programmes, co-supervision, sandwich programmes and joint degrees.
5	Increase the output of doctoral graduates.	Set targets for increasing doctoral graduates significantly and expand the funding for doctoral programmes to support this plan; draw on external doctoral education support programmes; strengthen relationships between universities and industry and science councils; develop centres of excellence; strengthen doctoral supervision; develop research benchmarks and involve postgraduate students in meeting these.
6	Strengthen regional cooperation through sector-crossing integration strategies based on agreed objectives, supported by funding schemes.	Fast-track the establishment of a SADC Qualifications Framework and implement strategies listed below to foster regional cooperation.
7	Foster innovation through networks for reflective learning, staff exchange and sharing good practices.	Build up research capacity in universities and research hubs, develop entrepreneurial education (and other soft skills) and intensify links between the public and private sectors.
8	Shift the emphasis towards knowledge diversity, interdisciplinary knowledge practices and southern scholarship.	Establish a higher education Regional Research and Development Fund (RRDF), to foster collaboration between institutions in different parts of the region centred on transnational research projects on areas of high regional

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	Strategy	Recommendations to Ministers of Education
		relevance within SADC. This will build R&D capacity and networks in critical areas and support the drive for indigenous knowledge production for economic success and social progress, particularly in respect of processes of democratisation.
9	Develop a funding focus for higher education.	Taking into consideration issues of higher education supply, capacity and demand, develop a funding focus and long-term policy support for higher education.
10	Strengthen governance, leadership and management in higher education.	Support higher education leaders and work closely with the 'quadruple helix' for change: government leaders, higher education leaders, business leaders and community to roll out a regional strategy for higher education.

A five-point action plan for revitalising higher education in the SADC region

1   Plan a **funding strategy** that harnesses public funds as well as private sector and donor funding to increase the level of resourcing available for foundational collaborative projects designed to strengthen higher education systems and infrastructure in the SADC region.

2   Focus on four clear **priorities for action** for Ministers of Education within the framework of a three-year plan to revitalise higher education in the SADC region:

    a.   Plan the roll-out of high-speed bandwidth throughout the region

    b.   Plan for plant expansion (classrooms, residences, laboratories, computer labs, administration facilities) through matching funding sought on the basis of plans tabled and funds committed by governments

    c.   Set up the Regional Research & Development Fund proposed by SARUA

    d.   Put in place mechanisms for increased mobility through seed funding for the human resources and infrastructure required to coordinate mobility at all levels of the system.

3   Plan a **regional higher education donor conference** at which 4-5 proposals are showcased and submitted for donor consideration.

4   Set up country teams to develop proposals for implementing a **strategy to expand and revitalise higher education in the region**:

    a.   Define the roles of the different countries in the creation of a multipolar structure of centres of excellence or specialisation which find synergies and share resources.

    b.   Link the work of all country teams to dedicated innovation sites and support networks.

5   What is required is **institutionalised and sustainable funding for a regional coordination body** to bring together key higher education players at the highest level (ministries, vice-

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chancellors, donors, private sector leaders) to foster south-south agenda formation and foster multi-country collaboration across the Anglophone, Lusophone and Francophone higher education systems in southern Africa.

Introduction

There is strong recognition of the role of universities in developing graduate citizens who are ready, willing and able to actively contribute to the development of the societies in which they live. Southern Africa has a burgeoning youth population, which ideally requires access to tertiary education. A quarter of Africa's total population – 276 million people – resides in the SADC region and half of this population is between the ages of 15 and 29 years old. The youthful nature of the region's population, high fertility rates, and the policy focus by governments on early phases of education (primary school) is indicative that the demand for tertiary education is likely to remain high. Therefore, our investment in young people's education and their ability to think critically will do the most to secure a sustainable future in our region.

1   Higher education trends

1.1   Enrolment rates

The demand for higher education in African countries is on the rise, as demonstrated by World Bank figures (2010): between 1991 and 2006 the number of students pursuing secondary and tertiary education in African countries tripled from 2.7 million to 9.3 million. Irfan & Margolese-Malin (2011) predict that if current demographic trends continue, the number of students bound for higher education could reach 20 million by 2015 for the continent as a whole.

Although there is an increasing demand for higher education in the Southern Africa region, levels of higher education provision and enrolment rates in the Southern African Development Community (SADC) countries are amongst the lowest in the world. In Southern Africa tertiary enrolment rates in 2010 were about half of what they were in the rest of Africa, and less than a sixth of the rest of the world's. Higher education enrolment just managed to keep pace with population growth.

This demonstrates a gap that has manifested between SADC region's tertiary enrolment rates and the rest of the world. While the SADC region's tertiary enrolment was on par with other parts of the world in the 1970s, by 2010 enrolment in those regions had risen by more than 20 per cent and Southern Africa was falling behind (apart from Mauritius and South Africa where tertiary enrolment increased by 20 per cent and 15 per cent respectively over the last 20 years). Poor enrolment is partly attributed to the SADC region being affected by low levels of tertiary education, but it is also a result of a strong past policy focus on primary education.

If SADC countries continue along their current higher education trajectory without making significant changes, the region is projected to achieve a 16,3 per cent enrolment rate in higher education by 2050. This progress is insufficient when compared to the *current* global gross tertiary enrolment ratio of 30 per cent, and will erode the future of higher education institutions in the region.

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1.2   Investment in education

The SADC region has invested heavily in education since 1970. According to Irfan & Margolese-Malin (2011) SADC's spending on education, as a percentage of GDP, remained close to the global average from 1970 to 1990. After 1990 the region's spending began to increase, to the point that by 2010, the SADC was spending more on education than any other region in the world.[1] The authors comment that much of the growth post-1990 may be due to high levels of spending by certain countries within the region. For example, in 2005 Lesotho and Botswana were spending 14 and 10 per cent of GDP respectively. At the same time, spending in Zambia and Madagascar fell to the lowest levels of any country in the region at 2.2 and 1.6 per cent respectively.

However, when the spending is examined as a percentage of government spending going to education, rather than as a percentage of GDP overall, it becomes clear that most of the investment went towards primary education and less on higher education: "Spending on education by the SADC governments [showed] … most growth occurring from 1970 to 1980, with decline 1980 to 1990 and then flat afterwards, reflecting a strong interest in primary, but less in higher education." (ibid)

Despite the number of students seeking higher education across African countries increasing three-fold between 1991 and 2006, the amount of funding earmarked for higher education only doubled (on average, some countries saw increases of as little as 75%). "This failure to keep up with increasing demand led to a 30 per cent drop in per student funding from 1991 to 2006, resulting in worsening quality and a decline in the number of teachers." (ibid: 7) The result of increasing numbers of students and lower levels of funding has been a decline in per student funding as well as a decrease in the quality of higher education and the number of academic teachers in Africa.

Over the last decade the annual spend of SADC countries on education has been between 4,5 and 5 per cent of Gross Domestic Product (GDP). SADC investment in education has thus been on par with UNESCO recommendations (6 per cent of the GDP) and has nearly matched what high income countries spend on education. SADC also invests more per student than other countries that have a similar level of educational achievement and income. At first glance, the higher education enrolment outcomes in the region therefore reflect poorly on the investment spent on education but this is owing to the focus of investment having been on primary education.

SARUA's profiling study (2008) shows that for most SADC countries, the funding for higher education currently comes overwhelmingly from government subsidy and student fees. In almost half the universities that responded to the survey, funding levels seem to have remained relatively unchanged over the previous ten-year period and there was little evidence of private sector support for higher education. The study also highlighted the limited extent to which higher education institutions in the SADC region were generating third-stream income or making use of donor funding that is not channelled through governments (Butcher *et al*, 2008). This analysis may change when the study is updated later this year.

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[1] From 1970 to 2010, the SADC region committed an average of 15 per cent of government spending on education, ranging from 14.2 per cent in 1970 to 15.1 per cent in 2010, with a high of 15.6 per cent reached in 1980. The world average during this period was 15 per cent and the African average 14 per cent (Irfan & Margolese-Malin, 2011).

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It appears that only two countries (Malawi and Mozambique) provide public higher education at almost no cost to the student. In most countries, students are required to carry a relatively high cost burden. In particular, students in the DRC and Mauritius are responsible for a large portion of higher education funding (49,7 and 58,8 per cent respectively). The data collected in this study point to widely varying percentages of students receiving student loans. (ibid)

1.3　Features of higher education provision in SADC countries

Higher education provision in the SADC countries is generally characterised by the following features. These are likely to have implications for the strategies countries need to forge in order to respond effectively to the rising demand for entry to higher education and the need to improve the quality of provision.

- Systems of higher education in Southern Africa are, on the whole, elite systems because overall, higher education provision in the region is low by world standards. Despite the rapid growth in the numbers of students attending higher education institutions in recent years, the systems remain small, and competition for places, in many instances, is high.
- Demand has outstripped capacity, leading in many instances to overcrowding and concerns regarding the quality of provision.
- The majority of registrations in higher education are in the humanities and social sciences, followed by registrations in business, management and other commercial fields. Registrations in the field of science, engineering and technology, fields which are of critical importance to national development, are comparatively low.
- There is a strong trend in the region towards undergraduate education, with doctoral registrations comprising only 1 per cent of the overall figure.
- The impact of funding constraints on academic teacher development and retention of staff is also worrying – evidence shows that the number of university teachers in Africa will need to double by 2015 to keep up with predicted number of higher education students, and universities in Southern Africa are well versed in the 'brain drain' phenomenon.
- Further constraints include the lack of infrastructure and the need to expand and improve ICT and other facilities that already exist.
- The demands for increased expenditure in order to make higher education more accessible will also impact on funding for research.
- In all SADC countries, with the exception of Malawi and Zimbabwe, there are more private higher education institutions than public sector institutions, but they tend to be small and offer specific qualifications (mainly in practice-oriented programmes) that are relevant for specific segments of the labour market. They thus account for a relatively low number of enrolments.

2　Scenarios for higher education in the SADC region

Over the last fifty years, the SADC region has seen a marked improvement in educational enrolment for both genders, at all levels of education. The region has also consistently outperformed sub-Saharan Africa (SSA) as a whole. But that being said, SADC still lags behind most other regions of the world in secondary and tertiary enrolment (Irfan & Margolese-Malin, 2011). While many of the post-1990 improvements are the result of global education goals like Education for All (EFA) and the

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Millennium Development Goals (of which one target is universal primary education by 2015), the progress made to date falls short of what would be required to meet demand. One out of every four primary-age children are still out of school, the capacity at the lower-secondary level is half of what is required, and at the upper secondary level, one third.

As noted earlier in this paper, Southern Africa's higher education enrolment of **6,3** per cent compares poorly with tertiary enrolment in other parts of the world, which by 2010 had risen by more than 20 per cent since 1970. For example, tertiary enrollment rates for the SADC and East Asia and the Pacific (EAP) regions were quite close in 1970, at .75 percent and 1.1 percent respectively. Over the subsequent decades, enrollment in the EAP continued to grow rapidly, and by 2010 had reached 22 percent.

Education forecasting is dependent on uncertainties such as population growth rates, rate of growth of the school-age population within the region, funding by the state for education, and the perceived importance of education by the population of a country. The *SADC Higher Education Futures 2050* report (Irfan & Margolese-Malin, 2011) uses three key drivers – population growth, economic growth and share of national income spent on education – to develop scenarios that predict tertiary enrolment rates in SADC.

- **Scenario 1:** If demographic and economic trends and other drivers of education, such as education policy, remain the same, data suggest that SADC will triple its tertiary enrolment rates between 2010 and 2050 to 16.3 per cent. This progress is insufficient when compared to other countries with historically similar levels of development such as the Arab states, which in 2010 had a regional per capita income close to what SADC per capita income will be in 2050. Unless the SADC region changes its higher education agenda, by 2050 SADC countries will **fall even further behind** other regions in Africa (e.g. north Africa) and the world in its tertiary enrolment rates.

- **Scenario 2:** In the case of low population growth, SADC countries would achieve tertiary enrolment of **18,5** per cent. However, it is very unlikely that SADC countries will reach a fertility rate below replacement rate by 2050 (Irfan & Margolese-Malin, 2011).

- **Scenario 3:** High economic growth will see tertiary enrolment increase to **20,4** per cent in the region.

- **Scenario 4:** Higher spending on education in the region would result in a **19,4** per cent tertiary enrolment rate in the region.

- **Scenario 5** is the most optimistic scenario: Reduced population growth, higher economic growth and a large share of the national income spent on education would see tertiary enrolment rates in SADC countries increase to **27,5** per cent by 2050.

These forecasts suggest that even if all the key drivers fell into place for the most optimistic scenario, SADC will still not reach the current global average enrolment rate of 30 per cent by 2050. However, it is not sufficient to consider only the quantitative aspects of expansion and growth in higher education in Southern Africa. Equally important is the issue of quality e.g. the development and expansion of postgraduate and doctoral level education – and their links to research as well as further education/lifelong learning at higher education level.

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At the country level, the projections for 2050 show the following:

Mauritius stays at the top while South Africa falls to third place behind Botswana. Botswana manages to cover the historical gap with South Africa because of the prudent use of their growing resources to meet the increasing demand for higher education that comes with a general increase in income. Whether the progress in higher education is enough to diversify Botswana's economy as the proceeds from diamond mining begin to decline is a question that is beyond the scope of this analysis. Angola, which in 2010 has about a 1 per cent tertiary enrolment rate, makes steady progress over the time period and catches up with Namibia, the SADC member with the third highest tertiary enrolment rate, by 2040. Given the recent improvements in Angola after the end of decades of conflict and increasing oil revenues, the country is likely to follow a more affluent path than many other SADC economies. Mozambique and Swaziland are two other countries that will achieve 20 per cent enrolment in tertiary education by mid-century. Malawi, the Democratic Republic of Congo and Madagascar will either stay at or fall below 10 per cent tertiary enrolment by mid-century. By 2050, these three countries together will hold close to 50 per cent of the SADC's population. (Irfan & Margolese-Malin, 2011:12)

3   Change imperatives

Improving the quantity and quality of higher education in Southern Africa depends on how universities contend with the demand for higher levels of enrolment and the increased expenditure required to achieve improved quality and output. According to Irfan & Margolese-Malin (2011) countries that have substantially increased their enrolment rates are those that have implemented **domestic and externally driven policy measures directed at higher education.**

Four imperatives emerge for a step-change in higher education development in the SADC region:

- The first is for a **strategic, targeted and differentiated approach to the expansion of higher education enrolments**, at all levels of the higher education pipeline (undergraduate as well as postgraduate study).
- The second is to **strengthen the quality of teaching and learning** in higher education institutions by increasing the qualifications of faculty, producing at least double the number of Masters and doctoral graduates, and retaining these skills within the universities.
- The third is to **change how universities work** in two respects: the first is to strengthen governance, leadership and management, and introduce management information systems to improve the effectiveness of higher education planning and expenditure; the second is to strengthen scholarship through interdisciplinary practice and collaboration for innovation.
- A fourth imperative refers to **how universities develop their research capability**. Will they develop research activities in order to achieve a good mix of applied research, a focus on direct technology transfer as well as basic research with long-term potential for innovation? Will they explicitly link postgraduate and doctoral education to research?

Strategies for the expansion of higher education need to be targeted, multi-faceted and smart. In the face of public resources that are thinly spread across education, health and other sectors, and given the reality of depleted numbers of quality academic staff in the region, countries have the following options:

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- Strengthen existing institutions rather than increasing the number of new institutions of higher education, although this is one option for expansion;
- Take into account the role of private higher education institutions under proper regulation;
- Expand distance education provision by making available online, digital and reputable offerings by reputable institutions;
- Build on the brands of well-established universities in the region and adopt a multi-country approach to draw these together in consortia of institutions, based on particular spheres of expertise and training in specific fields, occupations and professions;
- At undergraduate, masters or doctoral level, invest in targeted scaling-up strategies on the basis of identified needs e.g. in science and technology, particular areas in the humanities and social sciences.

Transforming the higher education sector will be as important as expanding it. This requires a paradigm shift in governance, leadership and management. It also involves raising the qualifications of academics, focusing on rates of remuneration for academic and other staff, lowering student:staff ratios, and developing a new generation of scholars and researchers. Equally important is raising the quality and focus of research, teaching and learning by moving from a siloed and single disciplinary approach to scholarship, to applied interdisciplinary practices, often working much more closely with the full range of stakeholders. Co-production of knowledge with policy-makers, communities and industry holds the key to SADC countries competing in the regional and global context of knowledge economies and knowledge societies.

> *Southern Africa requires research to introduce innovation in agriculture and industry. It requires human capital for conducting research and for advancing the quality, size and efficiency of its services economy from whence comes the largest proportion of GDP. It requires better ICT access, electronic media, and content for knowledge sharing and increasing democratisation. It also requires enabling policy and governance environments to support all of the above.*

> *Southern Africa's current reality is in stark contrast to the rapidly evolving trend, in which the rate of indigenous knowledge production is a key ingredient in the economic success of countries and economic regions in a globalised world.* Abrahams & Akinsanmi (2012 forthcoming)

According to Abrahams & Akinsanmi, a few countries stand out in terms of directing their policy priorities towards participation in a global science-based economy. These countries include Zambia, which has linked higher education to its intention to participate in global markets through technology commercialisation and export-oriented manufacturing in selected areas. Tanzania is explicitly seeking intellectual and technological excellence. In South Africa the higher education system is strongly linked into the national innovation system. Malawi is considering industrialisation through science and technology adoption. Mauritius has declared its intention to become a regional hub for higher education. In these countries, higher education will have a more strongly urban agenda. In Angola, the DRC, Lesotho, Mozambique, Namibia and Swaziland, knowledge economy formation may require a more definitively rural focus, addressing poverty reduction and basic infrastructure, while still aiming to capitalise knowledge for development through developing a critical mass of science and technology human resources.

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Making significant progress in respect of knowledge production, however, will require dealing with a range of other challenges in higher education that manifest themselves at regional level, national level and institutional level:

Regional level	No consistent terminology; lack of comparable data; lack of systematic co-operation initiatives; diverse forms of qualifications and governance mechanisms; different policies; different frameworks; insufficient collaboration; different language contexts; need for increased mobility; lack of commonly agreed objectives/aims or (where they are agreed e.g. in the SADC Protocol) their lack of implementation; and lack of harmonised strategies.
National level	Absence of funding and appropriate funding mechanisms (e.g. no formula for allocation or earmarked funds); poor ICT infrastructure; lack of planning capacity; lack of policy and regulatory capacity; science systems; poor and outdated research infrastructure.
Institutional level	Capacity development needed at all levels: student access; student success; postgraduate enrolment; staff attraction; retention and development; research development; community engagement; infrastructure and resourcing; curriculum.

Higher education leadership challenges in the SADC region (Kotecha, 2009:12)

4   Strategies for expanding and transforming higher education in the SADC region

SARUA's research and the consultations held with higher education leaders and policy-makers throughout the region have produced a number of findings, insights and recommendations for revitalising and strengthening higher education in SADC countries. These include:

- Scale up and modernise the higher education system through ICT infrastructure;
- Increase the effectiveness of higher education planning;
- Develop academic quality;
- Increase mobility of staff and students across the region;
- Increase the output of doctoral graduates;
- Strengthen regional cooperation through sector-crossing integration strategies based on agreed objectives, supported by funding schemes;
- Foster innovation through networks for reflective learning, staff exchange and sharing good practices;
- Shift the emphasis towards knowledge diversity, interdisciplinary knowledge practices and southern scholarship;
- Develop a funding focus for higher education;
- Strengthen governance, leadership and management in higher education.

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4.1 Scale up and modernise the higher education system through ICT infrastructure

It is a truism to say that the Internet is a critical resource for teaching, learning, research and management in universities, research councils and other post-school institutions. Yet Southern African countries face challenges in achieving economies of scale in respect of Internet access, partly owing to their geographical location at the base of the African continent, thousands of kilometers from the Internet hubs located in northern countries.

In most cases universities argue that their key problem is procuring sufficient Internet bandwidth and that they face a shortage of funding. However, universities in the region are currently spending some US$1.5m per month on bandwidth and many are getting little value for this investment. The real problem is related to the meager amounts of bandwidth that they can get for this money. In many countries bandwidth prices are still sustained at extraordinarily high levels by government-owned incumbent operators and regulatory environments that do not promote competition in the sector. These countries are getting left behind, because their wealth-generating enterprises cannot match the competitors' agility in supply-chain and customer-relations, let alone participate in online markets. Within institutions, the lack of effective ICT management and the lack of computer-based study and working places compound the problem of poor Internet access.

The two most important developments for securing improved Internet access for universities in sub-Saharan Africa in the future are:
- the pace at which national operators, cellular operators, multinational consortia of operators, and electrical power companies are **deploying optical fibre networks** that offer the prospect of much greater connectivity via optical fibre networks; and
- the rapid emergence of **national and regional Research and Education Networks (RENs)** as the organisational vehicles for inter-institutional collaboration.

Within the Southern African region, National RENs (NRENs) already exist in Democratic Republic of Congo, Malawi, Mozambique, Namibia, South Africa, Tanzania and Zambia. NRENs are in formation in Zimbabwe and Madagascar. These initiatives are working together to establish the first sub-Saharan regional research and education network.

By pooling their current expenditure on Internet access, through the formation of an in-country non-profit organisation, universities and research councils in individual Southern African countries will be able to:
- access vastly more bandwidth for the same amount of money, thus greatly lowering the unit cost of Internet access for students and staff;
- purchase Internet access rather than renting it, thus lowering the cost of access;
- access library and other materials for students and staff undertaking research;
- place themselves in a position to share the best teaching expertise throughout the country/Southern African region by video-conferencing/skype, thereby enhancing the quality of teaching whilst reducing hugely the cost and time involved in staff secondments;
- enable and enhance research collaboration regionally and internationally through connection to the global research and education community, all of which is supported by dedicated national and regional research and education infrastructure;

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- contribute to the building of a national and regional network which over time will create a regional backbone in Southern Africa and so become independent of the routing through London;
- create a connectivity core through which all levels of education can gradually get access, and through that accelerating the integration of ICT in education to create the kind of human resource that will enable national competitiveness in the global knowledge economy: many developed economies have worked through NRENs to reach primary and secondary schools.

Ministers of Education who wish to see their universities and research institutions connected to each other, to sub-Saharan Africa and to their counterparts in Europe and America, need to champion the formation of NRENs in their countries. They need to work closely with their counterparts in telecommunications who control resources such as network capacities and licences, and with their country's National Research and Education Network (NREN). Funding is required to start up the non-profit organisation that builds the national backbone in each country and Departments of Education could consider providing start-up funding for which matching funds could be sought from donors. In the longer term, the investments made through this model of university Internet access can also be extended to schools.

4.2   Increase the effectiveness of higher education planning

Higher education planning is closely related to the availability of management information systems in universities and other post-school institutions.[2] The lack of quality data in the SADC region, and higher education data specifically, has been well documented and was highlighted when SARUA conducted the first profiling study on higher education in the region (for some examples, see Butcher et al., 2008; Hahn, 2005; SADC, 2001; Umlilio we Mfundo, 2007; UNESCO, 2010). However, the importance of building data collection, analysis and reporting systems is recognised and integrated into regional strategy and planning processes. 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 highlighted 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, and a set of education indicators have been agreed to by all 15 SADC member states (Ndhlovu, 2010). An assessment of the current state of EMIS in the region was commissioned by the SADC EMIS Technical Committee. During 2010 the UNESCO Regional Bureau for Education in Africa published the results of research

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[2] The analysis in this section was compiled for SARUA by Wilson-Strydom M (2011) *Profiling Higher Education in SADC – Reflections, Lessons Learnt and Options for Institutionalising SADC Higher Education Profiling.* Bloemfontein: University of the Free State (unpublished report)

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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. This study also informed the EMIS regional capacity building strategy.

The importance of ensuring sufficient resources – human, technical and financial – to support an educational data management system was emphasised as a key element of ensuring data quality (SADC, 2009; UNESCO, 2010). The management of data systems, such as EMIS, requires skills in data collection, storing, integrating, processing, organising, outputting 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 for effective EMIS functioning and only half of the countries reported having the equipment needed in place. This shortage of resourcing for EMIS systems at a national level is likely to be evident at the institutional level as well and was certainly in evidence during SARUA's data collection work in 2007/8.

The experience of the EMIS Assessment Study demonstrates that some countries have difficulty in using digital interfaces (email or Internet) for data submission, while almost all the countries reported that some education institutions did not provide the data requested, even where data reporting was sanction in policy or law (SADC, 2008:7). In general the participating countries reported about a six-month turnaround time from within-country questionnaire distribution to publication of results (SADC, 2008:10).

Establishing effective EMIS systems necessitate that ministries of education must have clear legal mandates to collect information from all education and training institutions and bodies, and that such data collection needs to be guided by comprehensive national EMIS policies (SADC, 2008 and 2009). Critical in this regard is establishing a culture of quality data reporting so that all parties understand the value of the process and how the reporting of data impacts on and benefits their practice. Given the need for collaboration in strengthening the regional higher education sector, it is also necessary to consider whether the policy frameworks for data reporting are compatible between countries. However, it is critical that the reporting burden on institutions should not be excessive, but should be proportionate to the needs of the users of the information. Good practices in EMIS indicate that systems with the highest use tend to be those that are simple and modest in scope (Ellison, 2004).

Current experience with the second SARUA profiling study indicates that it has been easier to access the universities and ministries this time round because most are now aware of SARUA. However, there are persistent challenges with data quality, with the funding data being most problematic, requiring numerous requests for verification. **The building of institutional research capacity and management information systems thus remains an urgent priority for regional EMIS development processes.**

4.3   Develop academic quality

Southern African universities face the unique problem of having an ageing cohort of experienced academics and are failing to attract young people in significant numbers into the academy. Skills shortages and competition with private and other sectors, a failure to produce suitably qualified academics, brain drain of qualified academics trained elsewhere, poor conditions of service and low salaries, low numbers of suitable supervisors and mentors are all factors that contribute to this. This

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is in the context of growing demand for higher education and a growing recognition of the importance of universities in developing graduate citizens who can participate in economic and social development and knowledge economies, as well as the recognition that universities play a key role in developing knowledge for society through research activities.

In this context the challenge is not only to develop the human resources necessary to meet the demands of the academy, a challenge currently not being met in Southern Africa. The challenge is also to balance these needs with the development of the next generation of academics. The importance of increasing the output of doctoral graduates to meet the needs of the academy is well articulated (see section 4.6 below).

However, developing academics is not only about producing competent researchers. Universities in Southern Africa have large undergraduate (and postgraduate) teaching loads, and in some countries, like South Africa, undergraduate teaching remains an area needing significant attention, with poor throughput rates at undergraduate level. The complexities of developing competent university teachers is an area in which much research and development has taken place, yet teaching remains under-prioritised and under-valued in the academy. In preparing young people for the academy, research training alone is not adequate. As described in a recent HESA (Higher Education South Africa) document,

> *In as much as it is recognised that it takes an extended period of induction, practice, mentoring and support to develop as a researcher, it is inadequately acknowledged that to become an effective teacher in an academic context similarly requires an extensive period of induction, practice, mentoring and support. In the same way as theory, methodology and methods are explicitly taught as part of the grounding of a researcher, it is also necessary to ground future and new academics in the purposes of higher education, the challenges of transformation, engaging with a diverse student body, the nature and assessment of student learning, the induction of students into disciplines and knowledge production, and so on.*
> (HESA: 2011)

Furthermore, the quest for quality must take into account levels of remuneration for academics, student:staff ratios, and the working environments in which teaching, learning and research take place. SARUA's research notes that difficult working environments, a lack of resources and low salaries combine to force many academic staff in African universities to turn to consultancy and other private work as a means of generating additional income. This further reduces the capacity available for development within the public higher education sector and impacts on quality of teaching and research. This phenomenon has been called 'internal brain drain' (Ramphele, 2004 in Butcher et al, 2008).

4.4   Increase mobility of staff and students across the region

Student mobility worldwide continues to grow and has increased three-fold since 1980 to 3.4 million students in 2009. Students from sub-Saharan Africa account for 4.8 per cent of this number, second only to students from Central Asia (5.7 per cent) and this is more than double the world average (2.1 per cent). Although destinations such as the United Kingdom, France and Portugal outside the region receive large numbers of students, it is noteworthy that about 50 per cent of mobile students in the SADC region remain in the region by studying in another country in the region. The majority of these

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students study in South Africa, which ranks as the 11th biggest host country worldwide. Students studying outside their home countries account for 5.8 per cent of tertiary enrolment in the region.

The increase in student mobility in SADC takes place despite continued expansion and access to higher education in sub-Saharan Africa with enrolment numbers increasing from 2.2 million in 1999 to 4.5 million in 2008. The SADC Education Protocol makes specific reference to the need for student and staff mobility to be increased and recommends a variety of strategies in this regard. What is the potential for using academic mobility as a higher education capacity building strategy in the region, with reference to increasing the number of qualified academics while at the same time increasing the provision of higher education for students?

At a meeting in Pretoria in 2011, SADC university Vice-Chancellors considered that academic mobility is a complex phenomenon that manifests itself in the personal career choices of academics and study options of students, the institutional arrangements to make mobility and internationalisation possible, and the incentives and constraints associated with it.

From a capacity building perspective, the context, conditions and limited resources necessitate the need to leverage the resources that already exist so that all the institutions and countries in the region can benefit. It was noted that the situation in the SADC region is different from other parts of the world, where academic mobility is viewed as an instrument for earning foreign currency or as a measure to address challenges associated with an ageing population. At the same time it must be recognised that in Europe, for example, the critical mass of student mobility and staff mobility had a deep impact on higher education and the reform of higher education institutions.

It was **recommended that support be provided for academic mobility** that encourages postgraduate development, **particularly at Masters and PhD levels**. The emphasis should be on increasing the pool of academics with doctoral qualifications and, in this way, growing the next generation of academic staff. Furthermore, vice-chancellors regard the sharing of infrastructure as an inventive way to support academic mobility.

Specific measures are required to support this type of academic mobility in the region, but, unfortunately, little is known about the nature and the dynamics driving regional staff mobility. A process of **information gathering** is necessary to understand the needs of institutions and what support universities are able to provide. This should form the basis of a structured, systemic and sustainable programme of support for academic mobility in the region. The establishment of an ad hoc regional structure comprising representatives from the international office of universities from the region, where these structures exist, should play a leading role in such a process.

The establishment of a **scholarship programme** through which funding could be made available should be considered. The scholarship fund should aim to provide funds for academic studies at postgraduate level in fields of study that have been prioritised in line with the regional development agenda.

Furthermore, the fund should provide support for strengthening and deepening collaboration between countries and institutions for the development and sharing of academic resources and capacities. This could be done through providing technical and financial support for the development of innovative staff exchange initiatives, twinning or co-badging of programmes, co-supervision, sandwich programmes and joint degrees.

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The unique example of the Diaspora Lecturer Temporary Return Project, a partnership between the Zimbabwe Council on Higher Education, SARUA and the International Organisation for Migration, offered insights into a possible model for encouraging the return of academics in the Diaspora on a short-term basis. This project facilitated the return of 59 academics during the final quarter of 2010.

4.5   Increase the output of doctoral graduates

Doctoral education is globally recognised as an essential component of the growth and sustainability of higher education institutions and a foundation for knowledge production in societies. While doctoral education has gained momentum elsewhere in the world, the region lags critically behind in the number of PhD graduates it produces. SARUA's latest research amongst SADC countries shows that doctoral enrolments are only 1 per cent of total regional university enrolments, and if South Africa is excluded, only 0.17 per cent of enrolments appear as doctoral studies. Out of the total doctoral degrees gained across the SADC region's public universities (in 2008), 1 274 graduated from South African institutions. This means that SADC's other state-funded universities produced only 143 PhDs between them. Furthermore, although South Africa produces more PhD graduates than any other country in the SADC region, this only amounts to 28 PhD graduates per million people per year, and compares poorly with other developing and developed countries. Developing countries such as Turkey or Brazil are producing 48 and 52 PhD graduates per million people per year respectively.

Therefore, there is an urgent need to ensure that higher education institutions produce more Masters and PhD graduates so as to produce the next generation of academics and researchers who can produce the skills and knowledge Southern Africa needs to compete on a global level and to meet the developmental needs of the region.

Universities in the region need to boost the number of doctoral graduates, but this requires revisiting current approaches to doctoral education. Currently, doctoral students in the region face a variety of challenges which constrain their opportunities to participate in generating a world-class research. These include:

- An **absence of programmes to grow a new generation of academics**. Doctoral programmes do not focus sufficiently on creating an intellectually vibrant environment that allows students to progress in their areas of study and to engage with others in their own or other disciplines. As a result, isolation is a common experience during doctoral studies.

- A **lack of guidance from experienced academics**. The role of mentoring and supervision in the development of doctoral students is limited. In part this can be attributed to insufficient academic staff being available to supervise students or to a 'burden of supervision'. Research presented at a recent SARUA dialogue with vice chancellors from the region indicated that supervisors feel that they are allocated too many students to supervise and often have to supervise topics that are not within their area of expertise.

- The **absence of programmes to strengthen the engagement between new and established academics.**

- **Inadequate research funding for new academics.** Funding in higher education has been focused on staff and infrastructure to meet the increase in undergraduate enrolments and less funding has flowed into doctoral education.

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- **Too few opportunities for cross-disciplinary interaction.** Societal problems often require an understanding of diverse disciplines in order to solve them (for example, the epidemiology of AIDS, global warming, women's studies and land use) but insufficient opportunities are created for doctoral students to engage across disciplines.

- There is a **risk that higher education institutions treat doctoral students as being insignificant** rather than as individuals who have a valuable contribution to make to the Academy, even whilst they are studying. Unless doctoral students are viewed as future investments in growing and sustaining institutional capacity, and unless their social and economic context is taken into account, they are less likely to succeed in doctoral education.

- A high portion of the doctoral students receive grants that cover tuition but **only a few of these grants cover living expenses**. Since most doctoral students are mature people who often have families to support, this results in them taking on part-time work to generate sufficient income to cover basic living expenses, and diverts their attention from their studies.

Governments and tertiary institutions cannot develop a vibrant academic culture unless appropriate measures are put in place to support up-and-coming academics socially and academically. Leaders in higher education suggest that **an alternative model for doctoral education** needs to be implemented rapidly to address the challenges that doctoral students face and to develop well-rounded academics in the region. Suggested measures include:

- **Increasing doctoral and post-doctoral funding** – higher education institutions need to develop doctoral programmes and specific schemes to fund joint doctoral programmes.

- Consideration of **the social dimensions of doctoral study** (in addition to academic dimensions) – attention needs to focus on issues such as doctoral students' access to soft credit, medical aid schemes, housing and gender, in order to attract and retain doctoral candidates.

- Matching the increase in student enrolments with **sufficient senior lecturer and professorial staff**.

- Developing **clear career development paths and tenure track possibilities** (for example, regional access to tenure).

Challenges to increasing doctoral outputs are linked to the challenges that the higher education sector faces as a whole, not least of which are access to sufficient resources to invest in the human resources and the infrastructure required to meet demand. However, clear opportunities exist for **regional and institutional collaboration** to build the capacity of institutions **to grow doctoral outputs** and improve the quality of doctoral education, in turn enhancing research capacity. These are:

- **Escalate the numbers of doctoral graduates** through external intervention programmes, which draw on the vast institutionalised training expertise in the South and North to enhance the capacity of trainers and trainees in SADC;

- **Expand significantly the levels of funding for doctoral studies** in Southern Africa, with a focus on full-time study. This requires new and substantial refinancing models if the goal of increased numbers of doctoral students is to be achieved;

- **Strengthen and elaborate the relationship between universities and industry and science councils**, so that larger numbers of doctoral students are trained and supported through

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learning in practice while at the same time remaining in touch with on-campus academic expertise;

- Develop **centres of excellence** as a mechanism for doctoral students and supervisors to internationalise their studies;

- **Work as inter-university teams** in a collaborative environment to help to stimulate research;

- **Create an enabling environment** so that the region can build **communities of scholars;**

- **Rethink the current approach to supervision** and determining improved and innovative ways in which to support doctoral candidates in the region;

- **Collect data about doctoral study** to inform a strategic approach in the region, including information about the time required to complete degrees, reasons for drop-out rates, age of students, etc.;

- **Develop benchmarks for research** and, in doing so, assist Masters and doctoral students to meet these benchmarks and improve research outputs in the region.

4.6   Strengthen regional cooperation

The notion of regional cooperation in Higher Education in Africa started with the Arusha Convention[3]. The SADC Protocol on Education[4], signed in 1997, devoted an entire section to cooperation in higher education, as well as a section relating to cooperation in research and development. Twelve years later, in 2009, SARUA published its research which, for the first time, provided a profile of the higher education landscape in Southern Africa. It found that:

> *In countries where higher education is small, regional cooperation could be a valuable aid at many levels. Combating isolation and developing a community of peers is probably the most important of these. But this cooperation is made difficult by different systems, a lack of data, and a lack of planning capacity, as well as by restrictions on movement in the region, and differing national priorities.* Kotecha (2009)

The issue of regionalisation itself, and what this can mean for national systems of higher education, is still relatively unexplored. How political regionalisation will impact on higher education, and conversely, how higher education can benefit from regional cooperation, irrespective of the political domain, needs further debate. Regional integration/cooperation could also foster regional integration of the economic sector. What is common between these systems is the need for higher education to respond to the development challenges of each nation and of the region as a whole.

Although universities in the industrialised world are increasingly required to respond to the economic demands of their countries, very often in these instances it is the translation of activities to commercial ends that is required**.** In Southern Africa, as elsewhere in the developing world, the focus is less on the commercial and more on the developmental aspects of knowledge, innovation

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[3] *Arusha Convention on the recognition of qualifications in Higher Education in Africa*, (5 December, 1981). Retrieved on 20 August 2007 from http://www.col.org/colweb/webdav/site/myjahiasite/shared/docs/mindafviii_ArushaConv.pdf

[4] SADC: *Protocol on Education and Training* (1997). Retrieved on 8 August 2007 from http://www.sadc.int/english/documents/legal/protocols/education_and_training.php

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and application. Yet in order to perform this role, higher education systems themselves need development and transformation.

> *Higher education in SADC cannot afford to remain an outsider. It will have to play a mediating role in producing the knowledge in specific economic clusters, providing the necessary ideas about management and innovation (Andersen 2007:19). This means that higher education will have to strategically position itself between government and industry, to influence both, and to steer the trajectory of economic development in the region. … Higher education institutions will have to be autonomous, but also have a mutually beneficial relationship with the state, society and other stakeholders.* Gumede (2012 forthcoming)

A review of the SADC Education Protocol in 2007[5], found that while there were 57 examples of education collaboration between countries[6], the spread of collaboration was uneven: there was a tendency for well-resourced countries to dominate, with the result that programmes and institutions in smaller countries remained under-developed or deteriorated. Furthermore, the number of non-home students in smaller countries is relatively low even though in the past, institutions such as the University of Lesotho attracted large numbers of students from neighbouring countries.

The review found that the Technical Committee model of driving improvement in the quality of education has been successful and noted that some progress has been made towards the development of a SADC Qualifications Framework. However, by 2008 five countries (Angola, Botswana, Malawi, Namibia and Swaziland) did not have national quality assurance systems in place (Butcher et al, 2008) and the release of the findings from SARUA's second profiling study later in 2012 will indicate what developments have occurred since then.

In addition, Abrahams & Akinsani (2012 forthcoming) point to six major challenges for regional higher education collaboration in SADC, whether amongst universities, between universities and private firms, or university engagement with the public and development sectors:

- regional asymmetries (e.g. South Africa has relatively stronger integration into global markets than other SADC countries) and the challenge of minimising asymmetrical integration, as well as strengthening regional integration into global higher education (Hahn 2005);
- rapid technological advancement in the global knowledge economy as compared to the low levels of technology adoption and advancement including ICT adoption and usage (Kotecha 2008:5) creating a knowledge and digital divide prevalent in universities;

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[5] Umlilo weMfundo (2007). *Review of the Status and Capacities for the Implementation of the Protocol on Education and Training.* Gaborone, Botswana. SADC Secretariat.

[6] Examples of collaboration in higher education include the African Economics Research Consortium (AERC), active in the area of economics education and training at undergraduate as well as postgraduate levels; the African Network for Drugs and Diagnostics Innovation (ANDI), which is seeking to create regional hubs across the African continent; the Consortium for Advanced Research Training in Africa (CARTA), based in Nairobi at the African population and Health Research Centre; the Distance Education Association of Southern Africa (DEASA); the Educational Research Network in East and Southern Africa (ERNESA), which drives evidence-based enquiry; the Forum for African Women Educationalists (FAWE) and the Association for Strengthening Higher Education for Women in Africa (ASHEWA), two sister organisations that focus on education for girls and women; the National Education Statistical Information System (NESIS) established in 1989 by the Association for the Development of Education in Africa, ADEA, Working Group on Education Statistics, which offers training programmes from its location in the UNESCO Harare office; the Regional Initiative in Science and Education (RISE) networks, which support PhD and MSc-level scientists and engineers in sub-Saharan Africa through university-based research and training networks to increase the qualifications of university faculty; the Regional Universities Forum for Capacity Building in Agriculture **(**RUFORUM**)**, a consortium of 29 universities in Eastern, Central and Southern Africa; the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ), operational since 1991; and the University Science, Humanities and Engineering Partnerships in Africa (USHEPIA) which supports student mobility enablement in Africa using a network of institutions.

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- lack of awareness and ownership of the SADC Protocol on Education and Training within the higher education sector, since it was debated and agreed at the political level with minimal involvement of stakeholders from higher education;
- lack of concrete strategies to operationalise the collaboration envisaged by the SADC Protocol;[7]
- lack of funding and human resources applied explicitly to effective systemic collaboration;
- lack of systematically generated and centrally stored higher education data for the region.

4.7 Foster innovation through networks for reflective learning, staff exchange and sharing good practices

Prior to the major information technology advances of the late 20th century, the link between innovation and economic development was firmly established and accepted in developed countries. However, the relevance of formal processes of new knowledge generation to developing economies was questioned. It was argued that developing countries could ill-afford the 'critical mass' investments in research infrastructure, and that the economic policies of such countries should focus on alternative sources of knowledge, such as technology transfer and adaptation (referred to as non-technological, incremental innovation).

More recently this perspective has shifted, with most academic literature now supporting the development of strong national systems of innovation, including robust R&D performance agencies, as essential to the implementation of domestic development agendas. Governments are being urged to focus their efforts on how the two activities can be supported and fostered. In particular, it is emphasised that universities play a crucial role in all national systems of innovation, and particularly in the performance of basic and applied R&D, which collectively lay the foundations for a healthy innovation-based economy:

> *Development in Southern Africa is occurring at a time when increasing numbers of countries across the world are moving from efficiency-driven to innovation-driven economies, often termed "knowledge economies"[8] … Whether a country's economy is based primarily on agriculture, industry, or services, the application of knowledge in these economic sectors influences the rate of growth and the degree of advancement of the particular sector, and therefore the economy as a whole.*

> *The existence of some comparatively stronger and some comparatively weaker higher education systems within the SADC region means that revitalisation is a necessity for the entire region, rather than for individual institutions. Some institutions may offer models of good practice, but the risks and consequences attendant on skewed development across the region need to be addressed (Kotecha, 2008: 6). …*

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[7] In Europe increased mobility could be institutionalised because there were effective agencies at regional and national level to coordinate the drive for mobility, and higher education institutions appointed officers to manage the mobility and cooperation projects; in other words, there was a real re-organisation and evidence of re-prioritisation within the institutions.

[8] The World Economic Forum Global Competitiveness Report separates countries according to three stages of economic development, factor-driven, efficiency-driven, and innovation-driven. See www.weforum.org

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Southern Africa's current reality is in stark contrast to the rapidly evolving trend, in which the rate of indigenous knowledge production is a key ingredient in the economic success of countries and economic regions in a globalised world.

*While increasing graduate numbers and good governance will remain essential elements of good practice, this must coincide with bidding for increased funding from public and private sources, investing in better infrastructure, ensuring a high proportion of academic and postgraduate time spent in conducting and disseminating scholarly research, and creating a leadership milieu for all-round regional higher education revitalisation. **Failure to grasp this nettle will perpetuate the historical trajectory of knowledge impoverishment in Southern Africa relative to other regional higher education systems, regional economies, or global networks and compacts** (such as the European Union, OECD, APEC, and BRICS).* Abrahams & Akinsanmi (2012 forthcoming)

For this to happen, the region needs to move beyond the stage of being a consumer of knowledge produced elsewhere to a state of rapid increase in knowledge production able to meet its needs. The relationship between higher education institutions and industry could be redefined with regard to knowledge generation and technology transfer.

Unfortunately, the region is well below optimal performance levels in terms of both research output and human capital development. This is partly due to factors such underinvestment in research and research infrastructure as well as the haemorrhaging of talent to the developed nations, but it is also a function of **insufficient prioritisation of local research by governments**. Even countries that can afford higher expenditure have a pitiful response to local needs. Universities are ideal locations as centres for research and development, but cannot respond to local needs, such as health research on neglected diseases, without public funding. Making these investments is not just a question of affordability; it is also one of prioritisation on the part of national Treasuries.

African science output is dominated by three countries, namely Egypt, Nigeria and South Africa, with the three countries collectively accounting for over 80 per cent of the total output of scientific papers (Adams et al 2010). Furthermore research collaboration, which is so essential to the productive research and human capital development, is restricted to three distinct clusters on the continent with relatively poor collaboration between the clusters (ibid).

Other challenges identified by SARUA include:
- Researcher productivity is poor in most countries, with only South Africa and Namibia approaching the international standard of one publication per full time equivalent researcher per year.
- Research collaboration, which is so essential to the productive research and human capital development, is restricted to three distinct clusters on the continent with relatively poor collaboration between the clusters. Although co-authorship is relatively common within the SADC higher education institutions, North-South partnerships dominate and South-South collaborations are comparatively weak.
- The output of PhDs is very low both in absolute and normalised terms (PhD qualifications per full time equivalent researcher per year) within most SADC countries.

Southern African countries need to build up their research capacities in universities and research hubs, develop entrepreneurial education (and other soft skills) and intensify links between the public and private sectors.

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4.8   Shift the emphasis towards knowledge diversity, interdisciplinary knowledge practices and southern scholarship

As indicated at the start of this paper, the revitalisation of higher education in the SADC region requires a transformation agenda – both to strengthen the quality of higher education and to achieve the targets outlined in section 1.1. More of the same is unlikely to make any difference to achieving the vision of a vibrant regional knowledge society able to take its place in the community of nations and compete on equal footing in the global economy.

Three strategies are required to achieve a transformational change in higher education quality:
* Interdisciplinary practice and knowledge diversity, including a reweaving of Southern African knowledge practices;
* co-production of knowledge with policy makers, communities, industry and other stakeholders; and
* a massive step change in collaboration across the region, as a basis for collaborative learning for innovation through new relationships between higher education institutions and private sector players.

How can this be achieved? Universities in the SADC region can amplify the collaborative efforts already present in the region so as to address development challenges in several sectors. Through collaborative and cross-disciplinary foci, higher education players mitigate the risk of spreading themselves too thinly in the short-term.

SARUA has worked with the region's higher education leadership to develop a singular collaborative venture that creates the conditions for innovation, whilst at the same time addressing the realities of climate and global environmental change that will radically alter the regional development trajectory. Universities have a key role to play in building capacity to address issues of adaptation, mitigation and development, yet very significant collaborative potential remains under-utilised and under-mobilised. Many more such collaborative region-wide projects need to be launched.

SAURA has proposed the **establishment of a higher education institution Regional Research and Development Fund (RRDF),** which is intended to create the conditions that will foster collaboration between institutions in different parts of the region centred on transnational research projects on areas of high regional relevance within SADC. This will build R&D capacity and networks in critical areas and support the drive for indigenous knowledge production for economic success and social progress, particularly in respect of processes of democratisation.

Although there have been similar examples in the past of regional funds, this initiative will be novel in the following respects:
* It will be a south/south fund with a regional higher education institution focus;
* It will support only transnational research;
* The fund will be expertly managed (and governed) to ensure delivery, clear reporting to the donors and a low administration to disbursement ratio.

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4.9   Develop a funding focus for higher education

The implications of the scenario modeling discussed in section 1.1 above are that SADC needs to find urgent solutions to meet the demand for higher education, and this has been shown to be possible: Mauritius raised its tertiary enrolment rates by over 20 percentage points over the last twenty years to just over 25 per cent.

Since it is unlikely that the public purse will be able to sustain the growth required in higher education in the Southern African countries, diversified sources of funding need to be tapped from the private sector, bi-lateral agreements and a pool of funders in relation to a funding plan for the region.

A **funding plan** is required to deal with:

- The inter-related issues of **supply, capacity and demand**;
- The need for a **funding focus** on higher education, which includes tapping international donor sources, private sector players in the region and public funds;
- **Long-term policy interventions**, including policy on development and specific education policies that facilitate access to a differentiated system of tertiary education.

Ultimately, however, such a large-scale programme would depend on focused economic and political investment in higher education by the SADC region.

Solutions to the challenges of the youth bulge and declining funding include a better and more developed knowledge infrastructure and **differential post-school and higher education systems**. For example, **ICT networks** allow for distance education, the accessibility of information to ensure that programmes are cutting edge and high quality, and more effective programmes which attract and retain quality staff.

Given the pressure placed on domestic funding sources, countries need to start looking towards **Private sector and international funding as an alternative source to grow the higher education sector**. However, the point remains that future modeling scenarios clearly suggest that the current approach to higher education is unsustainable in terms of meeting the demand for education in the region and putting in place the resources necessary to ensure expanded and high quality education provision.

4.10   Strengthen governance, leadership and management in SADC higher education

The analysis presented in this paper demonstrates that there are 20 key challenges that face higher education leaders in the region:

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Higher education leadership challenges in in the SADC region

1	Data collection and availability	11	Research development
2	Access	12	Mobility
3	Postgraduate registrations	13	Quality
4	Success	14	Qualification frameworks
5	Staffing	15	Curriculum
6	Funding	16	Information and Communication Technologies (ICT)
7	Planning capacity	17	Policy and planning
8	Infrastructure and space	18	Engagement
9	Private provision	19	Cooperation
10	Commercialisation and entrepreneurialism	20	Leadership

SARUA, since inception, has recognised that enhancing governance, leadership and management capacity is key to the development of the higher education sector in the Southern African region. Capacity needs to be built at all levels of the system: individual, institutional and environmental. The challenge is to develop leadership at individual institutions as well as higher education leadership more broadly within countries and across the region as a whole. The Southern Africa higher education sector needs champions throughout the region to promote the strategic role of higher education for social, cultural, economic and political development.

Specific objectives for leadership development include:
- Foster co-operation and build strong relationships between Vice-Chancellors , Deputy Vice-Chancellors and middle management in the Southern African region;
- Promote and strengthen regional and institutional capacity building initiatives;
- Facilitate regional and international networks that advance information sharing, improved communication and transfer of knowledge on key strategic issues in higher education governance, management and leadership;
- Support the enhancement of institutional and regional leadership by identifying regional strengths, successes and gaps, so as to draw on international trends and best practices, as appropriate for the region;-
- Promote the empowerment and professionalisation of university leadership, governance and management in the region's universities and thus across the region;
- Develop research-based perspectives on governance, leadership and management to inform and enhance practice.

To strengthen governance, leadership and management in higher education in the SADC region, Ministers of Education need to support higher education leaders and work closely with the 'quadruple helix' for change - government leaders, higher education leaders, business leaders and community - to roll out a regional strategy for higher education.

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5   Recommendations for the Technical Committee on Higher Education

The preceding analysis gives rise to the following priority recommendations for the Technical Committee on Higher Education:

5.1   Plan a **funding strategy** that harnesses public funds as well as private sector and donor funding to increase the level of resourcing available for foundational collaborative projects designed to strengthen higher education systems and infrastructure in the SADC region.

5.2   Focus on four clear **priorities for action** for Ministers of Education within the framework of a three-year plan to revitalise higher education in the SADC region:
    e.   Plan the roll-out of high-speed bandwidth throughout the region
    f.   Plan for plant expansion (classrooms, residences, laboratories, computer labs, administration facilities) through matching funding sought on the basis of plans tabled and funds committed by governments
    g.   Set up the Regional Research & Development Fund proposed by SARUA
    h.   Put in place mechanisms for increased mobility through seed funding[9] for the human resources and infrastructure required to coordinate mobility at all levels of the system

5.3   Plan a **regional higher education donor conference** at which 4-5 proposals are showcased and submitted for donor consideration.

5.4   Set up country teams to develop proposals for implementing a **strategy to expand and revitalise higher education in the region**:
    c.   Define the roles of the different countries in the creation of a multipolar structure of centres of excellence or specialisation which find synergies and share resources.
    d.   Link the work of all country teams to dedicated innovation sites and support networks.

5.5   What is required is **institutionalised and sustainable funding for a regional coordination body** to bring together key higher education players at the highest level (ministries, vice-chancellors, donors, private sector leaders) to foster south-south agenda formation and foster multi-country collaboration across the Anglophone, Lusophone and Francophone higher education systems in southern Africa.

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[9]As well as other mechanisms developed to great effect in the European context.

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