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## Seeking Impact and Visibility

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# Chapter 3

## The Southern African university context

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In this chapter, we analyse the broader contexts shaping scholarly communication activity at the Universities of Botswana, Cape Town, Mauritius and Namibia. We start by detailing the general conditions of higher education in Southern Africa so as to grasp how the region both reflects and refracts conditions at these different universities. Then we profile the major features of each university's national and institutional context, focusing on history, demographics, funding, human capital, infrastructure, research and management. This three-tier nested approach – analysing the regional, national and institutional settings – will also allow us to locate more precisely which contexts shape the different elements of our research sites' activity systems, a point that will be crucial for the kinds of interventions we later recommend. Because this chapter includes a lot of information, readers should feel free to skip to the sections they believe will be most helpful for understanding the later more analytical chapters. We have included this thick description here so that readers can have the necessary supporting information for grasping the complexity of this nested ecosystem. Thus it can be read now – drawing down from the macro to the micro – or consulted later as needed.

### Southern Africa

Southern Africa (here defined as the countries within the Southern African Development Community, or SADC) is home to 14 countries<sup>20</sup> and 253 million people. The region hosts 54 universities and makes a significant contribution to continental research production (though only a marginal one to the global literature). As the four SCAP study sites were all located in Southern Africa, it is valuable to consider the region's specific context, both to avoid the all-too-common problem of writing about “Africa” as an undifferentiated, essentialised monolith and to develop a more concise understanding of the geopolitical environment in which the four study sites are located.

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20 SADC member states: Angola, Botswana, the Democratic Republic of the Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

Southern Africa spans South Africa in the south to the Democratic Republic of Congo (DRC) in the north, and includes the south-eastern Indian Ocean islands of Madagascar, Mauritius and Réunion. It contains the continent's biggest economy (South Africa), its most innovative economy (Mauritius<sup>21</sup>) and the four most unequal countries in the world (Namibia, South Africa, Botswana and Lesotho<sup>22</sup>).

## History

Southern Africa follows the general pattern of post-colonial tertiary education development, with the significant exception of South Africa. While the majority of the region's universities were established after the 1960s, many of South Africa's most highly ranked universities were established in the first two decades of the 20th century. As such, the country has been a centre of academic excellence and attracts many students from throughout the region. These universities were able to avoid various crises in sub-Saharan African higher education due to the presence of its own national funding capacity, a fact that has contributed to South Africa's dominance in regional research production.

## Demographics

Southern Africa's tertiary gross enrolment rate was 6.3% in 2012, comprising 1.3 million students, 51% of whom were female (Wilson-Strydom & Fongwa 2012: 19). Within the region the gender profile is mixed: Lesotho, Mauritius, South Africa, Namibia and Swaziland follow the global trend of higher female enrolment, while the other SADC countries conform more to the general African trend for greater male participation in tertiary education. These figures are comparable with African higher education enrolment in general. The majority (84%) of tertiary education is based on contact-tuition (Wilson-Strydom & Fongwa 2012: 18) and is largely urban in nature.

## Funding

Within the region there is a large differentiation in terms of national expenditure on education, which is not directly correlated with educational outcomes. Lesotho, for example, spends 13.4% of its GDP on education and fares second "in respect of the availability of scientists and engineers for research and development" (Richards 2008: 4) yet ranks lower than South Africa in terms of innovation, in 117th place vs South Africa's 54th (Global Innovation Index 2012).

Research funding in the region is generally low, and heavily dependent on international funding agencies:

*A very substantial 42% of all respondents from SADC (RSA excluded) indicated that they source between 70 and 90% of their research funding from overseas compared to only 6% of South African respondents. The responses very clearly*

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21 Global Innovation Index 2013, available at: [www.globalinnovationindex.org/content.aspx?page=data-analysis](http://www.globalinnovationindex.org/content.aspx?page=data-analysis)

22 Kevin Lincoln (2011) The 39 Most Unequal Countries in the World, *Business Insider*, available at: [www.businessinsider.com/most-unequal-countries-in-the-world-2011-10?op=1](http://www.businessinsider.com/most-unequal-countries-in-the-world-2011-10?op=1)

*show the dependence of SADC scientists on international funding for their research; and conversely how little domestic funding is available for research. We should also point out that this picture is even worse if one keeps in mind that the scientists in our sample were identified because they are the most active and productive scientists in their fields in their countries.* (Mouton 2010: 23)

Excluding South Africa, which spends 0.9% of its GDP on R&D (DST 2013), the average regional expenditure is closer to 0.3%. Institutions themselves often struggle to provide sufficient funding for their academics' proposed research budgets, contributing to short-term, introspective and derivative research work.

In such a funding environment, consultancies offer an attractive alternative for researchers struggling with inadequate institutional and national funding systems, and “more than two thirds of all academics in the fourteen SADC countries regularly engage in consultancy” (Mouton 2010: 15). As with sub-Saharan Africa in general, the influence that consultancy work exerts on Southern African research agendas can be seen in both positive and negative lights – offering on the one hand the opportunity to conduct well-funded and relevant research, while on the other taking time away from basic or theoretical research, and locating executive control over the region's research agenda outside of the academic community itself (Mamdani 2011a; Mkandawire 2011). Even national governments have comparatively little control over the shape of public science (Mouton *et al.* 2008).

### Human capital

The “brain drain” problem so common in sub-Saharan Africa is also felt in Southern Africa, but with the caveat that, along with international emigration, there is also a good deal of intraregional migration, mostly to South Africa. Student migration can be as high as 87% and 65% in Botswana and Namibia, respectively, while “South Africa has the highest inbound mobility rate with nearly 50,000 foreign students studying in the country in 2005” (Mouton 2010: 20).

The brain drain phenomenon has historically been driven by multiple factors, including the declining quality of life across Africa from the late 1970s to the early 1990s, the lack of knowledge-intensive industry to provide desirable employment, the deterioration of the higher education sector, political instability and the lack of local postgraduate programmes (Barclay 2002; Mouton *et al.* 2008).

### Infrastructure

Although SADC has the “most pervasive regional terrestrial fibre network” (SADC 2012: 27) on the continent, its access to and use of bandwidth is relatively low compared to global standards. “An average of only 4% of the SADC region's population are internet users today” (SADC 2012: 21). “These generally low levels of internet penetration, are partly the result of the high cost of access, combined with low income levels, and the lack of fixed line infrastructure, combined with the relatively short period that lower cost wireless internet services (mainly 3G and WiMax) have been available in major urban

areas” (SADC 2012: 22). Furthermore, with regards to the average growth in internet penetration, the SADC region is “falling behind compared to the rest of the world (although it is ahead of the average for Africa as a whole)”, with the “region being almost 10 years behind the world average” (SADC 2012: 22).

In contrast to the low level of internet users, mobile telephony usage rates are quite high. “Encouraged by the early introduction of prepaid services (which now account for 80–90% of subscribers in the region), mobile uptake stood at an average of 60% of the population in 2010” (SADC 2012: 18). However, this figure “obscures fairly large variations (about 5 times) between SADC Member States, with the DRC and Malawi at only around 20% penetration while Seychelles, Botswana and South Africa are over 100% (due to the use of multiple SIM cards)” (SADC 2012: 18).

While the universities that we profiled enjoyed reasonable access to the internet and could enhance their scholarly communication activities even with their present level of access, the low levels experienced by other members of the population decreased the educational potential of the internet, especially at the basic education level.

## Research

Although Southern Africa research production is impressive by continental standards, most countries in the region still produce fewer than 1,000 ISI/WoS-ranked publications per year, with only Tanzania and South Africa producing more prolifically (Kotecha, Walwyn & Pinto 2011). Productivity per full-time-equivalent (FTE) researcher varies across the region, ranging from Namibia and South Africa producing close to 0.8 WoS-ranked publications per researcher per year and Botswana and Zimbabwe averaging close to 0.6 per researcher per year, to the DRC, producing very little ranked research (Kotecha, Walwyn & Pinto 2011). Even the higher performing countries in the region underperform relative to the developed-country average of 1.2–1.5 WoS articles per FTE researcher per year. Within the region, South Africa dominates: of the 11,000 research publications reported in the region in 2009, some 9,000 were produced by scholars in South Africa.

PhD qualifications are another metric of national research development. In 2010, the region produced 1,546 doctorates, of which only 125 were outside South Africa, which “accounts for 89% of PhDs in the region” (Kotecha, Walwyn & Pinto 2011: 12). Aside from Mauritius and South Africa, which produce between 0.3 and 0.4 PhDs per FTE researcher per year, the production of new doctorates is very low. In general, the education profile is biased towards undergraduate studies, as explained by Wilson-Strydom and Fongwa (2012: 38):

*The regional graduation profile is even more heavily skewed towards undergraduate qualifications, with 79% of graduations being at the undergraduate level, 15% at postgraduate level, 6% at the masters level and only 1% at doctoral level. If the South African data are removed, the proportion of undergraduate graduations increases to 88%, postgraduate graduation below masters level is 5%, and masters and doctoral qualifications together represent 5% of the total.*

South Africa's dominance in PhD production is partly due to internal intellectual migration. As many universities lack capacity for postgraduate supervision, South Africa is an attractive destination for regional postgraduate students. As PhD qualifications are strongly correlated with research production (Cloete, Bailey & Maassen 2011), the region's lack of endogenous PhD development is therefore a negative factor in intensifying research, especially the development of local epistemologies.

## Management

In many Southern African countries, the establishment of national universities coincided with independence and was one of the markers of a functioning, independent nation-state. In this environment, "the major purpose for establishing universities in these countries was, and still is, for the institutions to play a pioneering role in addressing problems of poverty, social disorganisation, low production, hunger, unemployment, illiteracy, disease, that is, the problems of underdevelopment" (Moshia 1986: 1).

As such, universities (especially in single-university countries) have always been strongly aligned with national governments. Academic freedom was even seen in some cases as "a petty bourgeois claim, a sort of luxury that poverty- and crisis-ridden societies cannot afford" (Sall 2001: 1). Yet this remains a situation in flux, as academics continue to voice concerns about the perceived detrimental effects of government interference in the academic enterprise, calling for universities to exert greater control over their own work.

With this regional setting in mind, we can now focus on each institution's context.

Table 3.1 Comparative national indicators

Indicator	Botswana	South Africa	Mauritius	Namibia
Population	2 million	51 million	1.3 million	1.2 million
Size	600,370km <sup>2</sup>	1,221,037km <sup>2</sup>	2,040km <sup>2</sup>	824,268km <sup>2</sup>
Public universities	2	23	2	2
Human Development Index	0.634	0.629	0.737	0.608
Gini Index	61	63.1	39	63.9
Gross National Income per capita	USD14,550	USD6,960	USD14,594	USD6,520

Table 3.2 Comparative university indicators<sup>23</sup>

Indicator	UB	UCT	UoM	UNAM
Academic staff numbers	877	2,200	260	718
Student enrolment	17,678	25,864	11,395	17,536
Student:staff ratio	20:1	12:1	32:1	40:1
International rankings				
Times Higher Education (THE)	--	113 (2012)	--	--
Quacquarelli Symonds	--	145	--	--
Shanghai Jiao Tong University	--	201–300	--	--
Webometrics	3,127 (43rd in Africa)	390 (2nd in Africa)	3,714 (59th in Africa)	3,514 (54th in Africa)

23 Webometrics Ranking Web of Universities, Africa, available at: [www.webometrics.info/en/africa](http://www.webometrics.info/en/africa) [accessed 7 November 2013]

## University of Botswana

Botswana is a sparsely populated country with just over two million people. One of the poorest countries in Africa at the time of its independence in 1966, it has since shown consistently strong rates of economic growth, driven primarily by mining and cattle farming, but increasingly diversifying into the finance, service and manufacturing industries. Today, Botswana has the highest credit rating in Africa,<sup>24</sup> the lowest rate of corruption on the continent<sup>25</sup> and a history of strong representative democracy (Sebudubudu & Botlhomilwe 2012). Nevertheless, it also experiences a highly unequal distribution of wealth and an unemployment rate of 17.8%.

As the country's flagship university, UB "is closely involved in the national development process of Botswana," mainly through teaching and "the research and development, consultancies and information services which they undertake."<sup>26</sup>

### History

Since independence, Botswana has followed an unusual trajectory in Africa, with an unbroken history of democratic governance, no military or ethnic unrest and no warfare with foreign countries (Sebudubudu & Botlhomilwe 2012). After independence, the nation enjoyed a long and sustained period of high growth that has led to its emergence as a middle-income country. As such, it has avoided some of the negative consequences of civil unrest such as population displacement and infrastructural destruction that have set back development in other parts of the continent. However, it has not escaped the ravages of the HIV/AIDS pandemic that is prevalent across southern Africa.

The history of higher education in the country is largely synonymous with UB, which began operating in 1964 as the University of Basutoland, Bechuanaland and Swaziland. In 1982 UB became an autonomous institution, steadily growing from four to eight faculties (Malete & Kobedi 2012). The university has for most of its history been a teaching-oriented institution, though it has a number of well-known research centres which attract international scholars and produce a large portion of the university's research output.<sup>27</sup> At the time of writing, UB was the largest single tertiary education provider in the country, though the number of private higher education institutions has also grown considerably over the past two decades.

### Demographics

There are close to 47,000 students of higher education in Botswana (TEC 2012: 2), of which 34,000 go to public HEIs and 13,000 go to private HEIs. This amounts to a

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24 *The Guardian* (2013) Credit ratings: how Fitch, Moody's and S&P rates each country. Available at: [www.guardian.co.uk/news/datablog/2010/apr/30/credit-ratings-country-fitch-moodys-standard](http://www.guardian.co.uk/news/datablog/2010/apr/30/credit-ratings-country-fitch-moodys-standard) [accessed 3 June 2013]

25 According to Transparency International's Corruption Perception Index of 2012, Botswana ranks 30th out of 174 nations surveyed (tied with Spain) and 1st in Africa. In comparison, Mauritius ranks 43rd internationally and 3rd in Africa; Namibia ranks 58th internationally and 6th in Africa; and South Africa ranks 69th internationally and 9th in Africa. See [www.transparency.org/cpi2012/results](http://www.transparency.org/cpi2012/results)

26 About UB, available at: [www.ub.bw/content/id/1895/About-UB/](http://www.ub.bw/content/id/1895/About-UB/)

27 UB History, available at: [www.ub.bw/content/id/1366/History/](http://www.ub.bw/content/id/1366/History/)

gross enrolment rate (GER) of the 18–24 population of 16.4% (TEC 2012: 24), which compares to an 18% rate in South Africa and 45% in Mauritius (TEC 2013).<sup>28</sup> UB hosts 17,678 students, accounting for 40% of the higher education enrolments in the country (TEC 2012: 2).

## Funding

Botswana spends approximately 20.2% of its national budget on education, amounting to 2.2% of the country's GNI (UNESCO 2012). According to the TEC (2012: 34), "the share of tertiary education expenditure is estimated to be around 4.1% of the GDP." The government provides full education subsidies to tertiary students from within Botswana, including costs of living and tuition, while international students pay for all of their expenses.

For research, the government proposed the creation of a National Research Council in the Botswana Long Term Vision 2016 (PTG 1997) for coordinating national-level research funding. However, that body has yet to be established. Thus most national research funds come from the various governmental ministries and bodies, such as the Tertiary Education Council (TEC), which provided "P10 million [USD1.2 million] for tertiary research funding in 2011" (TEC 2012: 47).

The bulk of publicly sourced funds for research at UB come from the university's internal research budget (which is almost totally derived from government subvention). Over the past years, with the university's decision to move from being a teaching-oriented to a research-oriented institution, UB faculties and departments have dramatically increased their research budget requests from P3.5 million (USD424,000) in 2008 to P7.5 million (USD909,000) in 2009. However, the actual amount distributed increased only from P1.6 million (USD194,000) to P2.6 million (USD315,000).<sup>29</sup> According to the university (UB 2008d: 23), "during the financial year 2008–2009, internal research funding was more than doubled to P3.5 million, and the budget for 2009/10 allocates P4 million."

Though the government provides the majority of research funding for the university, UB also receives research funds from external sources, such as the EU, UNDP, USAID, DANIDA, Microsoft and Debswana (UB 2008d: 23). To oversee the transfer of funds and promote research on campus, the Office of Research and Development (ORD) "currently supports over 150 active internally and externally funded projects" (UB 2008d: 24). However, many scholars and managers note that they would still like to see more research funding made available. For instance, the maximum for conference travel funds was P7,000 (USD850) while "UB funding, whose ceiling is P200,000 [USD24,000], is a very small amount for national researches."<sup>30</sup>

28 Baboki Kayawe (2013) Botswana aims at 20% tertiary education intake. *MmegiOnline*. Available at: [www.mmegi.bw/index.php?sid=1&aid=504&dir=2013/January/Thursday24](http://www.mmegi.bw/index.php?sid=1&aid=504&dir=2013/January/Thursday24)

29 On 3 April 2013, the exchange rate between the Botswana Pula and the USD was 8.25 Pula per dollar (and 0.9 Pula per South African rand).

30 UB Deputy Director-Research, Dr Jose Jackson-Malete, quoted in Arnold Letsholo (5 May 2013) Stakeholders develop Manual for Botswana Research Fund. *Sunday Standard*, available at: [www.sundaystandard.info/article.php?NewsID=16822](http://www.sundaystandard.info/article.php?NewsID=16822)



## Human capital

According to Mouton (2008: 28), “available figures from Botswana indicate that over 90% of doctors, 61% of pharmacists, and 64% of the radiography cadre in the health sector facilities are expatriates. As a result the country is making great efforts to expand local training capacity and to increase the number of health students to address the problem.”

Thus, over the last few years, UB has considerably expanded its postgraduate studies programme. The university enrolled 127 students for PhD studies in 2009/2010, out of a total postgraduate cohort of 1,499. The School of Postgraduate Studies at UB predicts that PhD enrolments will increase by 18% per year for the next seven years (Malete & Kobedi 2012). As of 2009/2010, 90% of UB enrolments were undergraduate and 10% were postgraduate (CHET 2012: 1).

On the staffing side, “in 2008/9 UB’s permanent staff were comprised of 59% PhD holders and 41% masters holders” (CHET 2012: 12). However, the university has been experiencing challenging staff shortages. In 2011, with an academic staff cohort of over 800 personnel, there were still 163 unfilled posts (UB Academic Staff 2012). Yet there were nearly 2,000 support staff, many of whom were perceived to cost the institution disproportionately to the value they provided. Attrition of staff to overseas institutions and to the private sector has been particularly worrying, driven by both more attractive wages and low morale of academics in the institution (UB Academic Staff 2012: 24).

## Infrastructure

Botswana has a dearth of fixed line telephony at seven lines per 100 residents, but a much higher rate of mobile telephony penetration, with 140 lines per 100 people. The use of internet services is dominated by urban populations while the rural areas receive little to no fixed-line bandwidth (Oladokun & Aina 2011).

At UB, bandwidth constraints remain a problem even as the university has considerably increased its investment in computer hardware. UB possesses an institutional repository, called the University of Botswana Research, Innovation and Scholarship Archive (UBRISA), which contained 936 digital objects as of June 2013. Moreover, UB “has experienced further growth in terms of construction of facilities such as the Faculty of Health Sciences, multidisciplinary offices, classrooms and lecture theatres which were completed by end of 2011/12” (MFDP 2013: 52).

## Research

Botswana is one of the top producers of rated research in Southern Africa. According to Teng-Zeng (2008: 71), “Botswana produced 880 articles in ISI-journals between 1995 and 2004, an average of 88 per year (of which 95% were produced by UB staff).” However, it is also characterised by a low level of “international and even within-country collaboration as measured by co-authorship ... The overall profile shows that academics are not typically involved in collaborative efforts. Whether this is due to historical reasons

(relative recent establishment of the University), or ICT-barriers, lack of funds or other factors, is not clear” (Teng-Zeng 2008: 71).

UB does not produce annual research reports (despite the use of the word “annual” in its periodic publications), thus it is difficult to obtain up-to-date information on research trends. However, this data from 2008 provides some sense of UB’s research activities: in that year, “the Faculty of Science was leading with 134 refereed journal articles, followed by the Faculty of Education with 51 articles, after which Social Sciences and Humanities had 34 and 30 articles respectively. The Faculties of Engineering and Technology and Business had 13 and nine refereed journal articles respectively while HOORC had 28 refereed journal articles” (UB 2008b: 16).<sup>31</sup>

According to CHET (2012: 12–13), “the average ratio for the eight-year period is 0.12 [ISI-rated articles per year], which implies that Botswana’s permanent academic staff produce on average one research publication every eight years” which is below the one-in-two years benchmark. Of course, this does not tally with scholars’ own CVs, which show a far greater level of activity though their work may not be visible to the ISI/WoS.

## Management

The UB administration operates according to what can be characterised as a “managerial” institutional culture (Bergquist & Pawlak 2008) in that it has a strong, centralised authority that wields power in a paternalistic, top-down fashion. However, a large portion of the academic staff want the university to re-focus on its “academic” mission because they believe that it has become too focused on the administration’s interests. A number of scholars recently collaborated to write a critique of the managerial culture at the university. They conducted a survey amongst the academics and presented a report to the staff union, which contained multiple criticisms of the university’s operations, namely the poor working conditions for academics, the top-heavy bureaucratic system and the growing deficit in academic staff numbers. The authors (UB Academic Staff 2012: 1) complained that:

*the present structure has never been reviewed, instead it has grown bigger and bigger, which is why presently there are more than twenty five directors, numerous deputy directors, assistant directors and managers. The governance structure is top heavy and therefore contradicts the vision and mission of the University and is not properly aligned to its core business.*

In addition to this, the government plays an important role in guiding public institutions such as UB. For instance, the government appoints the university’s vice chancellor and writes the national strategic development policies that the university must reference in planning its own goals and strategies.

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31 The report continues, “It should be noted that the data reflects reports made to ORD and it is undoubtedly incomplete, as reporting of research outputs is not mandatory for staff” (UB 2008b: 16).

Nonetheless, ORD helps scholars search for and find research funding opportunities, apply for funding, comply with funding requirements, commercialise research outputs<sup>32</sup> and develop long-term research funding strategies.<sup>33</sup> It also recruits post-doctoral fellows, sets up quality assurance frameworks for research plans, establishes partnerships for collaborative research, reviews and endorses funded project proposals and assists with other pre-award and post-award administration services.<sup>34</sup>

## University of Cape Town

South Africa has the strongest economy on the continent, though unemployment is high (at roughly 25%) and it still performs poorly on the Human Development Index (0.629). Its considerable mineral wealth and industrial and manufacturing capacity have not resulted in uniform economic development, due largely to the country's history of racial discrimination. The result is a dual economy where considerable wealth exists alongside stark poverty, broadly delineated along racial, class, and urban–rural lines. South Africa's colonial, industrial and liberation history sets it apart in many ways from its regional and continental neighbours, while also tying them together. Bentley, Habib and Morrow (2006: 10) describe the country's ambiguous place in Africa:

*Discussion of South Africa and Africa is always a delicate affair. South Africa is different in some respects to the rest of Africa, because of its history, its economy and the unusual composition of its population. The possibilities of mutual misunderstanding and resentment on both sides of the Limpopo are many. But South Africa is also an African country. Therefore it is legitimate to look at the rest of the continent and to consider South Africa as subject to many of the same forces and influences that have played and are playing on societies to the north.*

The country's higher education system substantiates this ambiguity, as portions of it (including UCT) resemble the well-resourced universities of the global North, while other portions face challenges that resemble those in other parts of Africa. South Africa's "differentiated" higher education system allows for these contrasting institutional realities, creating a diverse set of experiences for both scholars and students.

However, since the end of apartheid, the country has made great strides in opening higher education access to the entire South African population. According to the National Planning Commission (NPC) (2012: 317):

- Enrolment in HEIs increased from 490,494 students in 1994 to 837,644 in 2009 – a 71% increase.
- There have been significant demographic changes in student population: two thirds of university students were African in 2009 compared to a third in 1990.
- Student financial aid increased from ZAR10.3 million in 1994 to ZAR2.7 billion in 2010.

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32 The ORD Research Commercialisation Unit, available at: [www.ub.bw/content/id/1856/pid/1740/ac/1/fac/8//Commercialization/](http://www.ub.bw/content/id/1856/pid/1740/ac/1/fac/8//Commercialization/)

33 The Office of Research and Development, available at: [www.ub.bw/home/ac/1/fac/8/](http://www.ub.bw/home/ac/1/fac/8/)

34 ORD Funding, available at: [www.ub.bw/content/id/1952/pid/1740/ac/1/fac/8//Funding/](http://www.ub.bw/content/id/1952/pid/1740/ac/1/fac/8//Funding/)

- University research output increased from about 5,500 [ISI-rated journal articles] in 2003 to 9,600 in 2010.

Contributing to this picture is the University of Cape Town, one of South Africa's oldest and most prestigious universities. It is one of the most prolific producers of research output in the country, occupying an elite position in the differentiated system.

## History

South Africa has one of the longest continuous histories of tertiary education on Africa, with the universities of Cape Town and Stellenbosch having been granted full university status in 1918 after decades of prior higher education provision. However, due to the racial discrimination and systemic underdevelopment of certain areas stemming from colonialism and apartheid, the tertiary education landscape that developed was quite diverse in terms of institutional character, quality and mission. That diversity remains the case today. According to Bailey, Cloete and Pillay (2012: 21), "there are three categories of universities in the country presently: 11 universities (those institutions that were defined as such during the apartheid period and remain so); six universities of technology (the former technikons or technical universities); and, six comprehensive universities (which are merged universities and technikons)."

However, the country's challenges have impacted South African universities differently, in many ways reinforcing inequalities that were established during apartheid. That may be slowly changing with the expanded roles of the former technikons, though.

*The distribution of research capacity in higher education institutions is skewed in favour of historically white institutions. Under apartheid, the development of research capacity in black universities was severely limited, and they have only recently integrated research into their core functions. A research mandate has only recently been included in the institutional missions of universities of technology.*  
(NPC 2012: 326)

In this way, South Africa's higher education system is both an aberration from and a close replica of the higher education landscape in other parts of the continent, combining both strong and weak educational structures.

UCT's history goes back to 1829, when it was a high school for boys called the South African College. Historically a largely white institution, during apartheid it was considered a site of intellectual resistance by the state – colloquially known as "Moscow on the Hill."<sup>35</sup> Since 1994, UCT has sought to maintain its commitment to academic freedom and research excellence while expanding its access to students from disadvantaged backgrounds.

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35 UCT, Our History, available at: [www.uct.ac.za/about/intro/history/](http://www.uct.ac.za/about/intro/history/)

## Demographics

According to the Department of Higher Education and Training's (DHET) Green Paper on Post-School Education (DHET 2012a: 37):

*The 2011 preliminary student head count for the 23 universities was 899,120, which includes both full-time and part-time enrolments for contact and distance study. (The figure for 1994 was 495,356. This represents an increase of almost 82% since the advent of democracy.) ... For 2009, 82% of the total head count enrolment was at undergraduate level, while 5% were masters students and 1% were PhD students.*

While the vast majority of these students are South African citizens, a good percentage also comes from other countries, especially SADC countries (DHET 2012a: 51). In total, "South Africa's current participation rate in higher education, at 16–17% of the relevant age cohort (18–24 years old), is substantially higher than the average for sub-Saharan Africa (around 6%)" (Bailey, Cloete & Pillay 2012: 22).

Of the 900,000 university students in South Africa, UCT hosts nearly 26,000 of them, of which more than 8,000 are postgraduates.

## Funding

In 2011, 2.47% of the government's total expenditure went to higher education, amounting to 0.75% of national GDP.<sup>36</sup> The sector is funded through two mechanisms – an amount earmarked for specific expenditure as dictated by the government, and a separate block grant over which the universities themselves have discretion (DHET 2012b). Over the past decade, the percentage of funding provided as block grants has steadily decreased from 88% in 2000 to 74% in 2011. Nevertheless, the majority of government funding is not earmarked for specific expenditure and universities retain control over the majority of their expenditure. Universities also receive funding through student fees and accommodation charges, as well as through private donations (Bailey, Cloete & Pillay 2012). Moreover, HEIs in South Africa "are free to generate 'third-stream' income through, amongst others, research and entrepreneurial activities. Such third-stream income constituted 23% and 27% of total revenue in 2004 and 2007, respectively" (Bailey, Cloete & Pillay 2012: 24).

Of UCT's total operating budget income in 2011, ZAR1 billion came from state appropriations (subsidies and grants), ZAR735 million came from student tuition and fees, ZAR117 million came from the sale of goods and services and ZAR23 million came from private gifts and grants.<sup>37</sup>

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36 Financial and Fiscal Commission (2012) *FFC 2013/2014 Technical Report*. Johannesburg: FFC, p. 58. Available at: [www.ffc.co.za/index.php/component/docman/doc\\_download/364-2013-2014-technical-report?Itemid=](http://www.ffc.co.za/index.php/component/docman/doc_download/364-2013-2014-technical-report?Itemid=)

37 UCT Facts & Figures (2013), available at: [www.uct.ac.za/downloads/uct.ac.za/about/aboutuct\\_2012-13.pdf](http://www.uct.ac.za/downloads/uct.ac.za/about/aboutuct_2012-13.pdf)

In addition, “total research income was ZAR841 million in 2011,”<sup>38</sup> of which “research contracts to the value of ZAR682 million were processed” (UCT 2012a: 17). “ZAR90.26 million [worth of research contracts] were entered into with South African government departments, public enterprises and statutory bodies in 2012. South African science councils, national research centres and non-profit entities accounted for ZAR48.5 million of signed contracts, whereas contracts with South African industry were valued at ZAR111.4 million. Major South African industry partners include the Eskom Group, Anglo Group, Old Mutual, Rustenburg Platinum Mines, and the Sasol Group” (UCT 2012a: 27). The diversity and scale of this funding allows the university to support substantial levels of research activity.

### Human capital

While South Africa’s higher education system fares well compared to many other Southern African countries, it is struggling to keep up with its own needs. According to the NPC (2012: 316), “the South African post-school system is not well designed to meet the skills development needs of either the youth or the economy. Approximately three times as many students enter universities each year compared to those entering [Further Education and Training (FET)] colleges. In 2010, universities enrolled around 950,000 students while [FET] colleges enrolled about 300,000.” This imbalance at the student level is now being matched at the academic level, as the aging staff cohort fails to be replaced by enough younger academics to cope with the rising student numbers (DHET 2012a: 45).

Thus, “despite the obvious progress with regards to the numbers of doctoral graduates, with 26 doctorates per million of the country’s total population, South Africa lags far behind countries such as Portugal (569 PhDs per million), the United Kingdom (288 per million), Australia (264 per million), the United States of America (201 per million), Korea (187 per million) and Brazil (48 per million)” (DHET 2012a: 42). Currently, 34% of higher education sector staff in South Africa have PhDs (NPC 2012: 319).

UCT employs about 5,000 staff members, of which there are “897 permanent instruction/research or academic staff” and an unlisted number of other non-permanent (contract, part-time, visiting) staff, which total close to 1,300, making up an academic staff complement of about 2,200. “The proportion of full-time academic staff qualified at the doctoral level in 2011 was 67%. A further 27% of all academic staff held masters level qualifications” (UCT 2012c: 62).

The university has a student-to-academic staff ratio of approximately 12:1. In contrast to many other universities in the region, UCT has a very strong postgraduate sector. Nearly one third of the student enrolment at UCT is in postgraduate degrees. This has important consequences for UCT’s research output – with such a high proportion of its student body involved in research, UCT has a strong endogenous research base.

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38 Ibid.

## Infrastructure

South Africa has the best-equipped and most modern ICT system in Africa, with more than one mobile phone per person and high bandwidth capacity. There are large discrepancies in the distribution of these communication resources, with the urban areas being comparatively well resourced, while rural areas in poorer parts of the country have less access. There are 4.127 million fixed telephone lines in operation (less than 10 per 100 population) and 64 million mobile phones in the country of 51 million people.<sup>39</sup>

UCT possesses significant research infrastructure such as scientific laboratories, libraries, computer labs, internet platforms and various types of equipment. Moreover, the institution is home to 71 research groupings, discipline-specific and transdisciplinary research groups “which incorporate members and students from across departments and faculties” (UCT 2012a: 44).

## Research

South Africa is the dominant producer of research in Africa, contributing more than 80% of the SADC region’s (ISI/WoS-rated) research. The Academy of Science for South Africa (ASSAF) sums up the country’s contemporary situation regarding “high-impact” academic research publications (ASSAF 2006: xiii):

*About 7,000 research articles are published annually from South African addresses in ISI-indexed journals or in un-indexed journals accredited by the Department of Education. Recent surveys of the South African Science and Technology (S&T) indicators ... [show that] ... 16,000 researchers publish about 7,000 papers a year, or on average about 0.4 papers per researcher per year.*

This research occurs in a diverse national research infrastructure characterised by a differentiated strategy at the education and research levels. “There are multiple sites of research and knowledge production, which are partly or wholly separated from higher education: in industrial laboratories, government departments, corporate research units, parastatals, statutory research councils and NGOs, or through collaboration between these organisations” (NPC 2012: 326).

UCT scholars are actively engaged in research, in terms of conducting it, getting money and contracts to do it and in producing outputs as a result of it (UCT 2012a: 13):

- 1,218 research contracts
- ZAR682 million value of research contracts
- 415 NRF-rated researchers
- 33 SARChI research chairs
- 1,314.40 units publication count
- 2,500 journals, books and proceedings

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39 IndexMundi, South Africa Telecommunications Profile 2013, available at: [www.indexmundi.com/south\\_africa/telecommunications\\_profile.html](http://www.indexmundi.com/south_africa/telecommunications_profile.html) [accessed 3 December 2013]

## Management

The DHET is responsible for managing the higher education sector in South Africa. It not only oversees the 23 public universities and 50 Further Education and Training (FET) colleges and various Skills Education and Training Authorities (SETAs), but also looks after other key parts of the national research infrastructure, including the Human Sciences Research Council (HSRC), National Research Foundation (NRF), the Council for Scientific and Industrial Research (CSIR), the Medical Research Council (MRC) and so forth. These bodies promote research production in their fields and also provide funding to researchers and research entities.

At UCT itself, scholars enjoy the support of a broad array of entities such as the UCT Research Office,<sup>40</sup> the Research Contracts and Intellectual Property Services Office,<sup>41</sup> the Office for Industry Liaison and the Intellectual Property group.<sup>42</sup> These entities leverage the skills of scholars to obtain more research funding and opportunities, or they leverage the value of their research results so that they can have the broadest impact. UCT's Integrated Research Management Application (IRMA) also helps collect research data for the Annual Research Report and Publication Count processes,<sup>43</sup> granting the management detailed information for self-assessment, one of the key elements setting it apart from many other universities in the region.

UCT's institutional culture is best described as "collegial", in that much of the operational power of the university exists at the faculty level. It is also characterised by high levels of personal autonomy for scholars, who are able to have a say in how the university works. This has allowed the upper echelons of the university to focus on high-level strategy rather than everyday bureaucratic maintenance.

## University of Mauritius

As a tiny island in the middle of the Indian Ocean, Mauritius boasts a unique geography, demography and history. Originally a low-income, agriculture-based (sugar) economy, it has since transformed itself into a light industrial (textile) and services-based (tourism) economy and now seeks to evolve yet again into an important player in the "knowledge economy".

Set in the central part of the island in Reduit, UoM is the largest provider of tertiary education in the country, with almost a quarter of all national tertiary enrolments. It is now just one of many HEIs to choose from, but its relatively long history, consistent government support, flagship status and solid level of international connectivity through administrative and faculty networks make it an important education institution for scholars throughout the region.

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40 Research Office, available at: [www.researchoffice.uct.ac.za](http://www.researchoffice.uct.ac.za)

41 RCIPS, available at: [www.rcips.uct.ac.za/contracts/overview/](http://www.rcips.uct.ac.za/contracts/overview/)

42 IP Group, available at: [www.rcips.uct.ac.za/ip/overview/](http://www.rcips.uct.ac.za/ip/overview/)

43 IRMA, available at: [www.researchoffice.uct.ac.za/publication\\_count/irma/](http://www.researchoffice.uct.ac.za/publication_count/irma/)



## History

Before Mauritius gained its independence in 1968, it was characterised by high levels of underdevelopment, reliance on primary industry (largely sugar cane farming), an oligarchic social structure with European-descended citizens owning most of the island's capital and a heterogeneous working population of African, Malagasy, Chinese and Indian descent. At independence, the island had the highest population density in Africa, a rapidly growing youth population and ethnic tensions that made it a “strong candidate for failure” (Subramanian & Roy 2003: 1). However, it was able to sustain high rates of GDP growth of 5.9% per year, compared to an average 2.4% across the rest of Africa (Subramanian & Roy 2003: 3), diversify its economy, and maintain inclusive democratic participation and governance.

In 1968, the only tertiary institution that existed on the island was UoM. Since then, the tertiary education sector has grown significantly and now includes 74 public and private HEIs (TEC 2007: 1). UoM was originally focused on teaching, but it has gradually tried to develop itself into a “research-informed” university. That is, scholars were given mild encouragement to conduct and publish their own research, especially in the sciences. Significant funding from the World Bank made research facilities available early on, leading to notable improvements in research capacity. Coupled with the rising numbers of staff PhD holders, the university has expanded its research mission and offered more post-graduate programmes for UoM students.

## Demographics

With a population of approximately 1.3 million and a per capita GDP of USD14,594, education is seen as crucial to long-term government planning in Mauritius, especially the goal of having “a graduate in every household” (MTESRT 2013). The gross tertiary enrolment ratio is 45%, with 14% of the 45,969 students currently enrolled in post-graduate programmes (TEC 2013). However, more than a third (33.6%) of Mauritian students are enrolled in international universities (Mahlaha 2012: 51). With the government's desire to transform Mauritius into a knowledge economy by 2025 (TEC 2013), the higher education system plays a central role in helping achieve this goal.

UoM has 11,395 students, of which 26% are enrolled for part-time studies and 10% are enrolled for postgraduate degrees. More than half of the students are female. To teach and supervise these students, the university employs about 260 full-time academics.

## Funding

The government spends 13.3% of its budget on education, amounting to 3.65% of national GDP. Undergraduate students do not pay student fees, but postgraduate and diploma students pay full price. The majority of funds for research and publication in Mauritius is distributed by the Mauritius Research Council (MRC) and the Tertiary Education Commission (TEC), under the aegis of the Ministry of Tertiary Education, Science, Research and Technology (MTESRT).

The MRC promotes and coordinates the government's investment in research. It provides funding through research grant schemes that prioritise issues of national interest, namely biomedical and pharmaceutical research, ICTs, land and marine use, energy and waste management, and science, technology and education. It also supports research commercialisation and industrial–academic relationship building.

The TEC is responsible for allocating funds to each of the various Mauritian HEIs, including UoM. It also provides research funding to experienced scholars (those with 30+ years of experience) through a programme of research funding for short-term (under two years) projects (TEC 2013: 25).

According to the *UoM Annual Report* (UoM 2012), the university's research expenditure in 2011/2012 amounted to MUR 35.5 million (USD1.2 million) out of an institution-wide expenditure total of MUR734 million (USD25.3 million). This equals about 5% of the university's total expenditure. As part of this, "in order to encourage further research, each Faculty was allocated one million rupees so as to carry out viable research projects emanating from the UoM Research Week 2011" (UoM 2012: 3). The vast majority of the university's expenses go to staff salaries, comprising 76% of total expenditure (UoM 2012: 103).

## Human capital

Mauritius has set an impressive standard for the region with its proportion of PhDs. In SADC, "only South Africa and Mauritius have a PhD qualification rate of above 0.3 PhDs/FTE/year" (Kotecha, Walwyn & Pinto 2011: 29). At the staffing level, the higher education sector "employs a total of some 2,700 persons on a full-time basis, of which around 400 work in private institutions. Overall, 30% of the employees are academic, 35% administrative, 15% technical/paraprofessional and 15% services/maintenance cadres. The number of employees working in the publicly funded institutions hover around 2,300."<sup>44</sup>

As of 2009/2010, 45% of UoM's roughly 260 academic staff held doctoral degrees and 44% held masters degrees (CHET 2012: 11). While 50% is considered a desirable benchmark by many analysts, the university's growing proportion of PhD holders has encouraged it to start more of its own PhD programmes on campus. Thus, in terms of graduate degrees produced, UoM greatly increased its outputs in 2010/2011, with a 25% increase in masters degrees awarded and a 42% increase in PhDs (UoM 2012).

## Infrastructure

Mauritius has a relatively high penetration of both mobile and fixed-line telephony compared to other SADC countries, with approximately 30 fixed lines per 100 population and 100 mobiles per 100 population (SADC 2012). Its internet penetration rate is 35%, just above the global average of 34.7% and more than twice the African average of 15.6% (Internet World Stats 2012).

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44 TEC, Review of the tertiary education sector 2011/2012, available at: [http://tec.intnet.mu/tesm\\_rvw.php](http://tec.intnet.mu/tesm_rvw.php)

Mauritius compares favourably with SADC peers in terms of internet connectivity and upload and download speeds. However, as an island nation, it remains dependent on a single cable for its international connectivity in the form of the South Africa Far East (SAFE/SAT-3) cable. This means limited international network redundancy.

However, regarding UoM, a TEC audit report (TEC 2012: 62) stated that “it is evident that the University’s teaching and learning infrastructure is ageing or even lacking, particularly for laboratory-based studies. The Audit Panel heard examples of equipment that is old or outdated, an insufficient number of instruments such as microscopes, a lack of chemicals, [etc.]” Facing such challenges and a corresponding lack of funds to rectify this quickly, many science scholars outsource elements of their data collection processes to overseas universities that have the equipment and capacity to do so. This is standard practice in the sciences, but it is not ideal for the development of in-house scientific research capacity.

At UoM, communication activities are supported by the Virtual Centre for Innovative Learning Technologies (VCILT) and the Centre of Information Technology and Systems (CITS), with the latter providing internet connectivity to the campus as well as most of the ICT systems support. CITS is often used by academic staff for a variety of research purposes, from purchasing specific software, to establishing video-conferencing and internet connectivity at seminars/workshops. CITS also provides the university with a wide range of ICT systems to support communication activities, including Google emails for staff and students, the university website, an online staff profile system and online applications for admissions, staff recruitment and module registration.

## Research

While UoM is the primary research body in the country, a number of other institutes and centres also focus on researching specific areas of national importance, such as fishing and agriculture,<sup>45</sup> which enhances the diversity of the island’s research environment, creating opportunities for researchers who want to apply their talents locally. Most of this activity is overseen or coordinated by the MRC, which also provides funding through competitive grants. For instance, “during the financial year 2008/2009, MRC had processed thirty six research applications. Thirty new projects were approved bringing the research portfolio to 349 with project value of MUR133 million. The total number of projects has increased from 52 to 349 implying an average of 32 projects per year. The project value has risen from MUR20.6m to MUR133m entailing that the council spent nearly MUR12m on average each year” (MRC 2009: 29).

Of these projects, about a quarter of the funding went to UoM-related research: “Academia, which includes the University of Mauritius and the University of Technology, are the major collaborating partner with a contribution of 27% in research work as at 30 June 2009” (MRC 2009: 31).

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45 Mauritius Science Portal (2013), Research Institutions in Mauritius, available at: [www.gov.mu/portal/sites/nsp/research/institution.htm](http://www.gov.mu/portal/sites/nsp/research/institution.htm)

Beyond these indicators, it is difficult to ascertain exactly the level of research production at the national level, but according to Wilson-Strydom and Fongwa (2012: 44), the island's two public universities combined to produce 188 peer-reviewed journal articles, one peer-reviewed book, seven book chapters, zero patents and 45 other items in 2010. The vast majority of these came from UoM faculty members.

According to Bunting and Cloete (2012: 30), UoM scholars produced 36 peer-reviewed research outputs in 2007, then just 26 in 2008. That would be 1 in 10 UoM scholars producing peer-reviewed research outputs in that year. Taking the analysis further, "the average ratio is 0.12 [peer-reviewed publications per year per scholar], which implies that Mauritius' permanent academic staff would produce on average one research publication every eight years" (CHET 2012: 12).

As we have argued in the opening chapter, these numbers grossly underestimate the amount of research production that goes on in African institutions, because they focus solely on measuring outputs in "prestigious" journals rather than the many that are not listed in the Thomson Reuters Journal Citations Report. In our data (which we discuss in Chapter 5), we found that UoM FoS scholars produced far more than one research output every eight years, but they were not necessarily published into WoS-rated journals. For a more accurate picture of research production, the *UoM Annual Report* (UoM 2012) provides better evidence of the quantity and diversity of outputs.<sup>46</sup>

One of the journals not on the WoS lists is the *University of Mauritius Research Journal*, a crucial publication outlet for some UoM scholars. During the 2011/2012 academic year, "76 requests for publication in the *UoM Research Journal* were received. Among these, 49 pertained to papers presented at the UoM Research Week 2010/2011. From 1 August 2011 to 31 July 2012, 27 articles were accepted for publication in the UoM Research Journal among which 14 emanated from the UoM Research Week" (UoM 2012: 15).

## Management

As already discussed above, the three primary bodies managing higher education in Mauritius are the MTESRT, TEC and MRC which combine to regulate, accredit and fund the various HEIs. They also provide strategic guidance on research, prioritising projects that fit within national research priorities. Their role in directing UoM research strategies cannot be overstated.

UoM itself is considered a highly "bureaucratic" institution (TEC 2012; Manraj 2013). This is exemplified by the abundance of administrative and support staff: of the 879 permanent staff employed in 2009/2010, only 225 were academic staff (Cloete & Bunting 2012). This abundance, however, did not translate into smooth administrative processes, such as the purchasing of new equipment:

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<sup>46</sup> See especially pp. 76–82 of the *UoM Annual Report 2011–2012*, which lists the Faculty of Science publications for the year, available at: [www.uom.ac.mu/aboutus/AnnualReport/2011\\_2012/07FOS.pdf](http://www.uom.ac.mu/aboutus/AnnualReport/2011_2012/07FOS.pdf)

*Despite departments and faculties submitting proposals for replacement of equipment, and despite the applications being approved for funding, the bureaucratic procedures and delays that characterise the procurement process are both frustrating and demotivating. There appears to be no clear University-level process to determine priorities for procurement of new equipment. It was explained that the Public Procurement Act 2006 has brought in more detailed public procurement processes. Consequently, the purchase of items requiring approval of the Public Procurement Office is quite lengthy. However, even items that do not need this approval can take time to purchase. (TEC 2012: 63)*

Complicating the situation considerably is the reported lack of administrative staff during institutional audits: “The Audit Panel heard repeated comments of a shortage of administrative staff, although the aggregate ratios of academic to administrative staff suggest a very high number of administrative staff” (TEC 2012: 46).

As a result, there seems to be both an overabundance of administrative staff, yet a shortage of administrative capacity. “Excessive centralisation” (Manraj 2013: 10), in which the upper administration decides on issues that could be better handled by individual faculties, has been proposed as one of the core problems facing UoM.

Compounding this, the vice chancellor’s office has seen a high turnover rate over the past few years, with the latest VC summarily dismissed in mid-2013. He lasted in the post only about a year. These disruptions in the top office have led to certain research strategies remaining unimplemented as the university waits for stable, strategic leadership.<sup>47</sup>

While this may describe the general situation at the university, it has tried to rationalise and streamline its approach to research management. The management and diffusion of research is governed by the Office of the Pro-Vice-Chancellor for Research, Consultancy and Innovation (Pro-VC RCI), which oversees a number of operational committees that deal with the implementation of research policies and procedures, coordinating research and providing facilities and funding for university research. It also runs the Consultancy and Contract Research Centre (CCRC) and the Centre for Applied Social Research (CASR). The CCRC aims to encourage academic staff to undertake consultancy and to establish closer links with industry while the CASR aims to design, carry out and interpret research studies within the field of public policy.

## University of Namibia

Namibia has a unique history that differentiates it from its continental and regional neighbours. Historically, while Namibia was colonised at the same time as most of the rest of Africa in the 1880s, it was the only area in the region taken over by the Germans who ruled the country with memorable brutality.<sup>48</sup> But after three decades of colonial

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47 Guillaume Gouges (17 Aug 2013) Controversy as university fires vice-chancellor, *University World News*, available at: [www.universityworldnews.com/article.php?story=20130816180045660](http://www.universityworldnews.com/article.php?story=20130816180045660)

48 Andrew Meldrum (16 August 2004) German minister says sorry for genocide in Namibia, *The Guardian*, available at: [www.theguardian.com/world/2004/aug/16/germany.andrewmeldrum](http://www.theguardian.com/world/2004/aug/16/germany.andrewmeldrum)

rule, Germany was defeated in World War I and forced to hand over control of “South West Africa” to South Africa (under a League of Nations mandate). South Africa then “administered” it as an unofficial fifth province until 1990 when Namibia gained its independence. During its rule, the South African government extended apartheid laws over the area and used the northern reaches of the country as a staging ground for military operations against Communist fighters in Angola. This militarisation of the region had a galvanising effect, however, on the South West Africa People’s Organisation (SWAPO), the country’s liberation movement that took over political leadership of the newly liberated Namibia as apartheid was nearing its end in South Africa. SWAPO still governs the country today, and many of its top leadership were instrumental in shaping the current features of the country’s higher education landscape, including the establishment of UNAM.

UNAM and the Polytechnic are the two universities that serve the country, though they are gradually being supported by the growth and development of the higher education sector. Established soon after independence, UNAM has steadily grown to the point that it now comprises ten campuses (the primary one being located in the capital, Windhoek) with both a contact and distance learning element. The university is responsible for most research activity in the country.

## History

Namibia has a relatively short history of internal higher education provision. Until the establishment of the Academy of Tertiary Education in 1980, tertiary education was undertaken overseas, or in South Africa proper. Currently, there are two public and two private higher education institutions in the country, the largest of which is UNAM, which is responsible for 53% of higher education sector enrolments (SARUA 2012: 1). Established in 1992, UNAM has grown rapidly and now educates 13,000 students, with a growing postgraduate component. In 2010 it merged with four teacher training colleges, resulting in a considerable influx of teaching staff with minimal research experience. The Polytechnic of Namibia is the second major provider of educational services, with nearly 9,000 students.

UNAM was established in 1992 as “a centre of higher learning served by dedicated men and women of quality, and producing graduates to uplift the standards of living of Namibian people.” Guided by the motto “Education, Service, Development”, the University’s programmes are “designed to meet national human resource requirements through quality teaching, research, consultancy and community service.”<sup>49</sup>

The university maintains close relationships with the national government. This is reflected in the UNAM mission statement, which is strongly aligned with national developmental goals and highlights the importance of remaining relevant to Namibian society. Government consults regularly with senior management officials, who often play roles in government themselves, and there is generally a strong relationship between them (Kirby-Harris 2003).

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49 UNAM History, available at: [www.unam.na/about\\_unam/history.html](http://www.unam.na/about_unam/history.html)

## Demographics

Bordered by Angola to the north, Botswana to the east and South Africa to the south, Namibia is a large, mostly arid country with a population of approximately 2.3 million (Mahlaha 2012). Achieving independence in 1990, the country has since remained politically stable, but it suffers from relatively high unemployment at a rate of 27.4%,<sup>50</sup> high rates of HIV infection, and highly unequal distribution of wealth. In this way, Namibia is quite similar to its neighbours, sharing a similar unemployment, health risk, inequality and mineral reliance profile.

Nevertheless, Namibians have largely been able to see to their own higher education needs, with the vast majority of educators in the sector hailing from the country. According to Mahlaha (2012: 66), “the Namibian public universities reported having 858 academic and research staff, the majority of whom (93.4%) are national citizens. Only 120 (6.6%) of the academic and research staff were reported to be from outside Namibia (75 from other SADC countries, and 45 from countries outside the SADC region).”

With a student population of close to 13,000, academic programmes at UNAM emanate from eight faculties and two schools. To date, UNAM has graduated over 17,000 students who are serving the country in various sectors of the economy, with a number occupying prominent positions in government and the private sector.

## Funding

Of the national budget, 22% went to education in 2010, of which 17% of that went to higher education provision (SARUA 2012: 4). While the proportion of spending on education has been holding firm in the low twenties for some years, the tertiary funding portion of that funding has jumped from an average of 10% up until 2009 to 17% in 2010, signalling a growing importance for the government in tertiary education, though the percentage of GDP that this represents is still only 0.6%.<sup>51</sup>

The university allocates a budget of approximately N\$ 1 million (USD101,010) every year to the Research and Publications Office (RPO),<sup>52</sup> which distributes it in grants to scholars and UNAM’s various research centres. According to the RPO website:

*The RPO administers a Budget which caters for Research Projects, Conference attendance and Publication charges .... Proposals are expected to address the research issues prioritised by the applicant’s Faculty/Centre in its Research Strategy. It is also expected that senior academics should include young researchers in the research teams for mentoring and capacity-building purposes. Collaborative research is encouraged, hence priority for funding will be given to proposals that fulfill this requirement.<sup>53</sup>*

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50 Namibia Statistics Agency (2013) *The Namibia Labour Force Survey 2012 Report*, available at:

51 Moses Magadza (30 November 2013) Namibia: Wake-up call for the higher education sector, *University World News*, available at: [www.universityworldnews.com/article.php?story=20131128172631434](http://www.universityworldnews.com/article.php?story=20131128172631434)

52 UNAM Research, available at: [www.unam.na/research/preface.html](http://www.unam.na/research/preface.html)

53 RPO research guidelines, available at: [www.unam.na/research/guidelines.html](http://www.unam.na/research/guidelines.html)

The research budget that the RPO deals with amounts to approximately 1% of the university's entire budget (SARUA 2012: 4). The sources of funding for UNAM research (in 2011) are as follows (SARUA 2012: 5):

- Government subsidy/grants: 64%
- Donations – private individuals/trusts: 21%
- Donations – private sector/businesses/corporation: 5%
- Donations – international funders/donors: 2%
- Loans: 5%

### Human capital

Namibia's tertiary education sector currently has a gross enrolment ratio of 10.5%,<sup>54</sup> which is greater than the African average of about 6%, but lower than that of Botswana (16.4%), South Africa (18%) and Mauritius (45%).

In 2011, 21,455 undergraduate students were enrolled in Namibia's two public universities (UNAM and the Polytechnic) as well as 429 masters students, 78 doctoral students and 10 post-doctoral students (SARUA 2012: 2). In that same year, nationally there were 3,526 Bachelors degrees awarded, 20 masters, four PhDs and 14 post-docs (SARUA 2012: 3).

Of the 718 permanent academic staff members at UNAM, 122 hold PhDs, 36 are full professors and 288 of the lecturers hold masters degrees.<sup>55</sup>

### Infrastructure

Namibia has an internet penetration rate of 12%,<sup>56</sup> mobile telephony coverage of just over 100 mobiles per 100 population, but a low number of fixed lines, less than 10 per 100 population.<sup>57</sup> Internet access is strongly located in the urban areas.

A wireless network was established at the university's main campus in February 2012;<sup>58</sup> however, connectivity problems, especially with regard to accessing e-journals, have been noted as a problem in institutional self-evaluation reports (CEQUAM 2012). As will be discussed in Chapter 6, UNAM also has a new institutional repository where the university's scholarly outputs are curated and profiled.<sup>59</sup>

54 Ibid.

55 About UNAM, available at: [www.unam.na/about\\_unam/about\\_unam\\_index.html](http://www.unam.na/about_unam/about_unam_index.html)

56 Internet World Stats, Internet Usage Statistics for Africa, available at: [www.internetworldstats.com/stats1.htm](http://www.internetworldstats.com/stats1.htm) [accessed 4 December 2013]

57 IST Africa, Overview of ICT infrastructure in Namibia, available at: [www.ist-africa.org/home/default.asp?page=doc-by-id&docid=3581](http://www.ist-africa.org/home/default.asp?page=doc-by-id&docid=3581) [accessed 4 December 2013]

58 eLearning Africa (6 March 2012) The University of Namibia goes wireless, available at: [www.elearning-africa.com/eLA\\_Newsportal/the-university-of-namibia-goes-wireless/](http://www.elearning-africa.com/eLA_Newsportal/the-university-of-namibia-goes-wireless/)

59 UNAM Digital Collections, available at: <http://digital.unam.na/>



## Research

As a small country with a small academic cohort, Namibia produces a modest amount of research per scholar/researcher. According to SARUA, in 2010, Namibia produced 98 peer-reviewed journal articles, 10 peer-reviewed books, 29 peer-reviewed book chapters, seven patents and 228 reports, theses, study guides and conference papers (SARUA 2012: 8). However, this represents solid growth from the average rates of production in previous years. As Nkwelo (2012: 140) notes:

*According to the Institute for Scientific Research, Namibia produced a total of 480 [ISI-rated] papers between the years 2001 and 2007. This implies an average of 64 papers per year. There is a clear increase in output over the past three years which is worth mentioning. Although the University of Namibia is mainly a teaching university with low staff numbers it still produces the bulk of these papers. Other research institutions which regularly publish a significant number of papers are the Ministry of Fisheries and Marine Resources (which collaborates with UCT in Cape Town), the Desert Research Foundation, Geological Survey, which produced 23 and 21 publications respectively, significantly lagging behind UNAM.*

With regards to the level of international collaboration involved in various research publications between 1994–2004, scholarly collaboration leading to publication in ISI-rated journals was primarily with South Africa (75 papers) and Germany (71), followed by the USA (38), England (27) and France (18). Collaborations with other non-South African regional or continental partners were less robust, with Kenya leading with four papers (Nkwelo 2012: 142).

UNAM has only recently begun to engage strategically with research communication, but it is making significant efforts to ramp up research production and to create a stronger research culture amongst staff and postgraduate students. The UNAM Research Strategy was written in 2005, identifying various rewards and incentives for achieving this goal (Kiangi 2005).

In the latest publicly available Research Report, UNAM's management states that the university "has continued to take the lead in research performance in the country ... The year under review has seen a total output of 394 publications from the University, 23% of which are peer-reviewed journal articles and 11% are books and book chapters" (UNAM 2009: 6). Crucially, 66% are "other" outputs, the kind of outputs that remain invisible to the ISI/WoS indexes upon which institutional reputations are built.

The Faculty of Humanities and Social Sciences (FHSS) – SCAP's research and pilot site – produced 25% of all university outputs during the noted year (the largest proportion for all of the faculties) (UNAM 2009: 9). However, when it comes to the production of peer-reviewed journal articles, only 13% were published by the FHSS, while the Faculty of Science produced 30% (UNAM 2009: 10). This suggests that science communication is more skewed towards peer-reviewed journal production than the humanities and social sciences, which produces outputs in a more varied set of genres.

In its latest five-year Strategic Plan, the university has set ambitious targets for raising the rate of research production from its current modest base. Aiding in this effort is the recent capacitation of the UNAM Press. First established as an imprint in 2002, the Press became a fully functioning publishing unit in 2011. It plays an important role in assuring that more UNAM research is disseminated beyond the university, adding another publishing channel for scholars to consider.

## Management

With the recent implementation of the Research, Science and Technology Act in 2011 (as discussed in Chapter 4), Namibia has started to take some steps in increasing its research capacity. While it is still setting up a national research fund, there is already a Directorate of Research, Science and Technology and a newly established National Commission on Research, Science and Technology (NCRST), which was constituted to oversee the promotion and funding of research nationally. Once NCRST starts to administer funding – allowing university and other researchers to apply for funding outside of university research budget constraints – Namibia will be in a better place to answer many of the government’s desires for research that helps prepare Namibia to participate in the global knowledge economy.

Along with UNAM’s central administration – whose culture we characterise as “developmental” in later chapters – scholars are supported by a number of structures that help with producing and disseminating research. The primary entity is the RPO, which regulates, promotes and encourages research and publication among the academic community within the university, offering workshops,<sup>60</sup> institutional reviews, policy support, research proposal development, intellectual property guidance and quality assurance assistance.<sup>61</sup>

These general support services are enhanced by the presence of the University Central Consultancy Bureau (UCCB), which tenders “on behalf of the University for contracted projects and for which UNAM has expertise,”<sup>62</sup> and the Multi-disciplinary Research Centre (MRC), which conducts research in the physical and social sciences.<sup>63</sup>

## Conclusion

This brief discussion of the factors shaping Southern African and our partner institutions’ research and communication contexts gives an indication of how diverse the higher education sector is in this region. While SADC universities share certain historical and developmental features, creating the impression of a stable regional profile, they are in fact also shaped by quite particular experiences, challenges and aspirations that require anyone who would seek to intervene in these institutions to pay attention to their granular details along with their broader regional similarities.

60 RPO research training, available at: <http://www.unam.na/research/training.html>

61 UNAM Research, publications, papers, journals, abstracts: Preface, available at: [www.unam.na/research/preface.html](http://www.unam.na/research/preface.html)

62 UCCB, available at: [www.unam.na/centres/uccb/uccb\\_index.html](http://www.unam.na/centres/uccb/uccb_index.html)

63 UNAM Research, available at: [www.unam.na/research/preface.html](http://www.unam.na/research/preface.html)

UB is the flagship university of a large country in size, but small country in population, a fact it shares with UNAM. But unlike its Namibian neighbour, it is much older and features mature research support systems. It has embarked on a more robust research mission over the past years, developing policies, technologies and funding opportunities to match that ambition. By regional standards, it is a strong, stable institution.

UCT is an outlier in this group due to its age, history, demography and wealth. Along with a few other South African universities, its relatively impressive research output numbers help boost the broader regional research profile. But despite its age and traditions, UCT is trying to transition into a more locally responsive university that is accessible to South Africans of all backgrounds in the post-apartheid era. This is a sensitive challenge, one that the university is attempting to balance against its desire to also be a “world class university”.

UoM is the higher education powerhouse in Mauritius with a strong teaching history and moderate research capacity. As a small university on a geographically remote island, it enjoys close relations with the government (as “everyone knows each other here”) which has established a diverse research infrastructure to both support UoM research and diversify the points of national research production.

Lastly UNAM is a new university with a strong teaching focus and a growing research commitment. Similar to most African universities after independence, it has a pronounced developmental focus which has, for the most part, resulted in graduates who can contribute their skills to the country, but increasingly in research outputs that can contribute knowledge to anyone about the country. As the primary research provider in Namibia, UNAM bears a heavy burden, but the government is gradually expanding the research infrastructure and funding opportunities that will enhance research production at UNAM and beyond.

With these contextual details in mind, we now assess the policies shaping Southern African research and communication activities.