Scholarly Communication at the University of Namibia

Case Study Report

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Abbreviations

AGORA	Access to Global Online Research in Agriculture
APC	article processing charge
CC-BY-SA	Creative Commons – Attribution and Share Alike
CERN	European Organisation for Nuclear Research
CET	Centre for Educational Technology (UCT)
CHAT	Cultural Historical Activity Theory
CHED	Centre for Higher Education Development (UCT)
CHET	Centre for Higher Education Transformation (South Africa)
Comm	Faculty of Commerce (UCT)
Conf.	conference
COP	Conference of the Parties (annual UN climate change conference)
CRIS	current research information system
CS	civil society
DLIS	Department of Library and Information Studies (UB)
DOI	digital object identifier
DRC	Democratic Republic of Congo
DVC	deputy vice chancellor
EBSCO	Elton B Stephens Company (academic databases)
EIFL	Electronic Information for Libraries
EMS	enterprise management system
ERC	European Research Council
est.	estimated
EU	European Union
FHSS	Faculty of Humanities and Social Sciences (UNAM)
FoH	Faculty of Humanities (UB)
FoS	Faculty of Science (UoM)
FTE	full-time equivalent
GDP	gross domestic product
GER	gross enrolment ratio
GNI	gross national income
HEI	higher education institution
HERANA	Higher Education Research and Advocacy Network in Africa
HINARI	Health InterNetwork Access to Research Initiative
HoD	head of department
HSRC	Human Sciences Research Council (South Africa)
HTML	hyper-text mark-up language
ICT	information and communications technology
IDRC	International Development Research Centre (Canada)
IMF	International Monetary Fund
int'l	international
IP	intellectual property
IR	institutional repository
ILRC	Information and Learning Resource Centre (UNAM)
ISI	Institute for Scientific Information
IT	information technology
JISC	Joint Information Systems Committee
JPG	Joint Photographic Experts Group
MRC	Multi-disciplinary Research Council (UNAM)

NCRST	National Commission on Research, Science & Technology
NDP	National Development Plan
NGO	non-governmental organisation
NHS	National Health Service (UK)
NIH	National Institutes of Health (USA)
NIHR	National Institute for Health Research (UK)
non-ref'd	non-refereed
NPC	National Planning Commission
NRF	National Research Foundation (South Africa)
OA	open access
OARE	Online Access to Research in the Environment
OCS	Open Conference System
OER	Open Educational Resource
OJS	Open Journal System
OpenDOAR	Open Directory of Open Access Repositories
ORP	Office of Research and Publications (UNAM)
OSISA	Open Society Initiative of Southern Africa
PALM	Publishing and Alternative Licensing Model
PDF	portable document format
PERii	Programme for the Enhancement of Research Information
PI	principal investigation
PLOS	Public Library of Science
QA	quality assurance
R&D	research and development
RC	research coordinator
RCP	research and communication practice
RCUK	Research Council United Kingdom
REF	Research Excellence Framework (UK)
ROAR	Registry of Open Access Repositories
RPO	Research and Publications Office (UNAM)
RSA	Republic of South Africa
RSS	really simple syndication
SABINET	Southern African Bibliographic Information Network
SADC	Southern African Development Community
SALDRU	South African Labour and Development Research Unit (UCT)
SAPSE	South African Post Secondary Education
SARUA	Southern African Regional Universities Association
SCAP	Scholarly Communication in Africa Programme
SWAPO	South West Africa People's Organisation
TEI	tertiary education institution
THE	Times Higher Education
TIFF	tagged image file format
UB	University of Botswana
UCCB	University Central Consultancy Bureau (UNAM)
UCT	University of Cape Town
UIBR	use-inspired basic research
UNAM	University of Namibia
UNDP	United National Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation

UNIN	United Nations Institute for Namibia
UNISA	University of South Africa
URL	uniform resource locator
USD	United States Dollar ($)
VC	vice chancellor
WoS	Web of Science
YRE	years of research experience

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Executive summary

The problem

African scholarly research is relatively invisible for three primary reasons:

1. While research production on the continent is growing in absolute terms, it is falling in comparative terms (especially as other Southern countries such as China ramp up research production), reducing its relative visibility.
2. Traditional metrics of visibility (especially the ISI/WoS Impact Factor) which measure only formal scholar-to-scholar outputs (journal articles and books) fail to make legible a vast amount of African scholarly production, thus underestimating the amount of research activity on the continent.
3. Many African universities do not take a strategic approach to scholarly communication, nor utilise appropriate ICTs and Web 2.0 technologies to broaden the reach of their scholars' work or curate it for future generations, thus inadvertently minimising the impact and visibility of African research.

Visibility in this context amounts to more than just "accessibility" – it means *digital* accessibility. It means that a scholarly object is profiled in such a way that makes it easily findable by search engines or databases through a relevant search string. Thus, it requires a communications strategy, one of the ingredients missing in many African universities' and scholars' approach to research dissemination.

A key way to enhance Africa's research visibility, reach and effectiveness is by communicating it according to open access principles. Making all African research outputs clearly profiled, curated and made freely available to the public would give African research a higher likelihood of not only shaping academic discourse because it would be more visible to scholars, but of getting into the hands of government, industry and civil society personnel who can leverage it for development.

This approach is already taking root in the global North. In the past few years, major funding bodies in the EU, the UK and the USA have legislated open access mandates, requiring that all research funded by them must be made open access. This will raise the visibility of those regions' research while (comparatively) lowering the visibility of Africa's research, which is not produced under a similar mandate.

However, most of the technologies required for engaging in open access communication are either already available at African institutions, freely available on the internet, or relatively inexpensive to purchase. Most also have access to the same free Web 2.0 technologies that allow individual scholars to enhance their scholarly profiles and collaborative opportunities. But these have not been incorporated into a strategic plan concerning scholarly communication, nor have enough African universities dealt with the skills and capacity challenges that new scholarly communication imperatives demand.

The research

The Scholarly Communication in Africa Programme (SCAP) was established to help raise the visibility of African scholarship by mapping current research and communication practices in four Southern African universities and recommending technical and administrative solutions based on experiences gained in implementation initiatives piloted at these universities. The universities that SCAP engaged were the:

- University of Botswana (UB)
- University of Cape Town (UCT)
- University of Mauritius (UoM)
- University of Namibia (UNAM)

Funded by the Canadian International Development Research Centre (IDRC), the three-year programme built on the findings of previous studies to address the particular challenges faced by African universities as they attempt to align their scholarly communication practices with rapidly evolving global standards in a manner that still reflects their core institutional values. The two questions driving SCAP's research were:

1. What is the current state of scholarly communication in (Southern) African universities?
2. How can the use of ICTs, technology platforms and open access publishing models contribute to the improvement of strategic scholarly communication, and what institutional structures are needed to support such an approach?

To answer these questions, SCAP conducted extensive research at our four partner institutions. At UNAM, we worked with the Faculty of Humanities and Social Sciences (FHSS) as our research and pilot site. Over the course of four site visits, we obtained information through "change laboratory" workshops (where pilot site participants analysed their scholarly communication ecosystems), surveys, interviews, day-recalls, conversations and ethnographic observation. These methods provided us with rich data for understanding communication activity at UNAM FHSS.

This research was informed by Cultural Historical Activity Theory (CHAT), a methodology that encouraged us to view scholarly communication as occurring in an ecosystem, where a change to any element impacts all of the elements in the system. This allowed to us to approach these sites as historically dynamic and culturally complex systems, requiring us to understand them as comprehensively as possible before recommending interventions aimed at raising the visibility of their research outputs.

Research and communication practices

To understand the state of scholarly communication in the UNAM Faculty of Humanities and Social Sciences (FHSS), we explored FHSS scholars' values, research production, outputs, communication practices, networks and collaboration preferences.

Values

While UNAM FHSS scholars are motivated to conduct research by both intrinsic and extrinsic factors (such as earning promotion, personal desire and aiding national development), they are most highly motivated by two desires: to generate new knowledge and to enhance their teaching. This makes sense because UNAM is a teaching-oriented university where many scholars' sense of academic identity stems from that teaching mission; thus students are a primary audience for their research ideas. Equally important, many FHSS scholars want to "generate new knowledge" through their research, filling "gaps" in the country's humanities and social science knowledge. They see Namibia as "virgin territory" where researchers can explore numerous topics, often producing the first research on a topic locally. They are excited about this fact, that their research can help form the foundation for a truly national scholarly enterprise.

Research production

In this context, UNAM FHSS scholars say that they spend the bulk of their time engaged in teaching-related activities or administrative duties. Because of this, many staff members say that they do not have enough time for research. A majority of FHSS scholars say that they spend less than 20% of their work time involved in research-related activities.

Outputs

The university recognises a broad range of research output types. This enhances the likelihood that its scholars will produce "alternative outputs" (policy briefs, reports, working papers, etc.) that can reach diverse audiences that can leverage them for developmental purposes. This is a valuable feature of the UNAM scholarly communication ecosystem. However, it is also true that the production of some of these outputs – which are often interpretive and derivative – is less effective at building up a strong research culture in comparison to the production of empirical research outputs. Thus UNAM is at a critical juncture as it navigates the twin imperatives of strengthening its research capacity while also contributing to national development through accessible research activity. Both are ideally achieved in tandem.

Communication

While the UNAM FHSS staff members gradually ramp up their research production to meet the standards required of an emerging "research university", they are far less responsive to the changing communication opportunities that new ICTs offer for disseminating their work. For the most part, they confine their communication activities

to traditional modes, such as reading their papers at regional conferences, sharing drafts with colleagues who request copies, incorporating insights from their research into classroom teaching or submitting their articles for publication in journals. While the open access (OA) movement and availability of free online tools have expanded the opportunities for individual academics to profile their work on the internet and seek out collaborative partners, most UNAM FHSS scholars have yet to take advantage of them. This was due, in part, to the fact that UNAM scholars received no official rewards or incentives for publishing in OA journals or making their work available on the institutional repository (IR). However, this situation may soon change with the ratification of the new Scholarly Communications Policy and the deployment of a new IR.

Networks and collaboration

While only half of the FHSS academic staff say that they feel a sense of belonging to a broader research network, of those that do, the majority feel that sense of connection at the university. This stands in contrast to many other Southern African universities where scholars' sense of belonging is with international networks. This is because of the positive work being done in the faculty to build up the FHSS-based journal (which serves the humanities and social sciences community across the region), to promote participation in the various research showcasing events and to constitute strong mentorship opportunities between senior and junior staff members.

While this rich sense of engagement has been productive at the faculty level, it has not yet translated regionally into greater research collaboration. This is not for lack of trying, but rather for more practical, logistical and financial reasons. The networks that UNAM scholars are able to benefit from are most often with developed country scholars who enjoy the financial resources and administrative support to run large transnational projects. A number of FHSS scholars are connected with these international networks.

Policy

The Namibian government has created a set of policies to help transform the young country into a more knowledge-intensive economy. While these policies do not deal directly with scholarly communication per se, UNAM has sought to creatively translate the government's desires into an enabling research environment defined by appropriate scholarly communication practices. This is still an ongoing process.

Open access

The UNAM administration long ago recognised the potential of OA scholarship through its UNAM Research Strategy document of 2005. In it, the implications for OA to help forward national development were made clear, but since that time, there has been little movement in integrating that sentiment into policy. This has recently changed with UNAM's ratification of a new communications policy that places OA commitments at the centre of its dissemination strategy. This is crucial because, even though most FHSS scholars support OA, they have typically lacked the funding, capacity or incentives to ensure that their own work is disseminated in an open access fashion.

Rewards and incentives

UNAM's rewards and incentives support the production of non-traditional outputs (which are more accessible to non-academic audiences than formal journal articles), but they do not yet distinguish between outputs that are "open" or "closed" access. The publications assessment policy appears to trust commercial publishers to disseminate their scholars' work, failing to take into account that most of those publications will only be accessible to other scholars who boast university subscriptions to the relevant journals (many of which UNAM cannot even afford).

Institutional culture

UNAM's institutional culture is best described as "developmental", in that leadership is distributed across faculties where senior scholars (or "elders") act as models who exemplify good research activity to others, and in turn, develop their capacity. These senior scholars often occupy positions of power within faculties, departments or committees, distinguishing themselves by their solid publication records. It is they as individuals who "lead by example", often providing mentoring to junior scholars and exemplifying ideal scholarly behaviour to others who are still learning what constitutes good research. Power in this system is not top-down (managerial) or side-to-side (collegial), but front-back (developmental).

Research culture

These research, communication and networking conditions at UNAM have developed what we can call a "nascent" research culture. UNAM and the FHSS are taking important strides in developing a more robust academic core based on an enhanced research mission, but its fulfilment will take time. This description is warranted because:

- There is a low level of networking, collaboration and communication between colleagues within the faculty, though opportunities have been gradually expanding.
- There is a low sense of collegial expectation regarding peer research production.
- Only a small proportion of FHSS scholars serve on journal review editorial boards, meaning that they do not shape their fields as much as others.
- A large proportion of the FHSS academic staff are lecturers or junior lecturers who are largely devoted to the teaching mission rather than a research mission.

Infrastructure and capacity

As a young institution with a nascent research culture, UNAM remains open and responsive to new communication strategies because it has not yet become stuck in any "traditional" patterns of scholarly dissemination. Because of this, UNAM has been proactive about obtaining appropriate scholarly communication e-infrastructure, such as a new website, an IR and a scholarly profiling (e-portfolio) mechanism. Though UNAM has experienced some challenges with these technologies in the past (especially the previous IR installation), the management has been keen to learn the lessons from those episodes so as to ensure success going forward.

Skills and capacity

Since the failure of the previous IR, UNAM has paid greater attention to the impact that such technologies have on staff members' current work capacities. Thus it hasn't assumed that a given staff cohort, such as librarians, would have the necessary skills or capacity to run these new technologies just because universities in the global North often locate them in the library. Rather, the administration has sought to assess whether librarians can add such new responsibilities to their current ones, or whether they would need further training or new personnel. This has been a difficult process, but a necessary one if the new technologies are to form a stable feature of the institution's new scholarly communication strategy.

Implementation initiative

While the insights above were gained largely through our various research instruments, we also implemented a pilot intervention aimed at reviving the IR. This would:

- help make publishing a core function of the university
- enhance the visibility of outputs that can address national development issues
- provide academics with a platform to increase their scholarly footprint

This was achieved by utilising SCAP resources to build a pilot IR that – after members of the FHSS tested it by sharing their scholarly outputs on it – was to be opened up to the other faculties to add their content. Some of the insights that we gained from the implementation initiative were that:

1. Decisions concerning IR ownership and governance need to be made in light of the institution's current scholarly communication practices and the capacity of its stakeholders. Historical and cultural legacies impact on how new technologies are incorporated into a scholarly communication ecosystem, therefore it is important not to assume capacity based on norms or standards set elsewhere. The integration of new technologies must be made with the specific capacities and constraints of the institutional activity system in mind.
2. The development of e-infrastructure needs to be accompanied by the development of human capacity, especially in the rapidly evolving world of internet-driven communication. It is important that university personnel placed in new scholarly communication roles not only receive the training required to provide new services to the academic community, but that they also have a sense of the purpose and scope of the work they are doing.
3. It is crucial to engage with an institution's academic community in the repository development process. While many FHSS academics expressed an interest in the SCAP initiative, it took considerable time and effort to get them to share their research on the repository. The lack of time, rewards or incentives for sharing their outputs hindered scholars' interest in making the effort to submit their materials to the IR.
4. Repositories are unlikely to function optimally if they are not integrated into institutional strategic planning structures and core information technology frameworks.

Recommendations

Based on the insights yielded by the research and implementation activities above, SCAP believes that four stakeholders can play a key role in improving UNAM's dissemination activity, to whom we offer the following recommendations:

To the national government

Establish a national research fund so that scholars can seek local funding from more sources than just the UNAM research budget.

Design a virtuous research funding cycle in which, for each recognised output produced by a scholar and disseminated in an open access fashion, funds are directed into that scholar's faculty research budget so as to spur further research activities.

To the UNAM administration

Mandate that all publicly funded research be made open access.

Establish or identify support service providers who can translate scholars' research for government and community-based audiences.

Link performance assessment of scholars' outputs to what they deposit in the IR.

Get all UNAM-affiliated journals online and make them open access.

Establish a policy for the support for and payment of article processing charges (APCs).

Offer a reduction in teaching time to scholars who demonstrate ambitious research activity and *reduce their administrative duties to an absolute minimum*.

Establish digital platforms for sharing publication success by UNAM scholars.

Develop a communication officers/content managers network within UNAM so that disparate dissemination activity can be pursued in a more cohesive and strategic manner.

Support scholars in trying develop as much of their consultancy (contract) research for academic purposes.

Develop a Quality Assurance workflow process that incentivises senior scholars to review and give feedback to junior scholars.

Train and incentivise scholars to use Web 2.0 platforms so that they can enhance their visibility, collaborative opportunities and virtual networking capacity.

To UNAM scholars

Share responsibility with the administration for research visibility. Communicate research findings to the audiences that could best leverage it for developmental purposes.

To research funding agencies

Determine the feasibility of developing a regional megajournal.

Chapter 1.
Programme overview

The Scholarly Communication in Africa Programme (SCAP) was established to help raise the visibility of African scholarship by mapping current research and communication practices in four Southern African universities and by recommending and piloting technical and administrative innovations at these sites based on open access dissemination principles.

SCAP was founded with the understanding that African scholarly research is relatively invisible for three primary reasons:

1. While research production on the continent is growing in absolute terms (Metcalfe, Esseh & Willinsky 2009; Mouton 2010; Tijssen 2007), it is falling in comparative terms (especially as other Southern countries, such as China,[1] ramp up research production), reducing its relative visibility.
2. Traditional metrics of visibility (especially the ISI/WoS Impact Factor)[2] that measure only formal scholar-to-scholar outputs (i.e. journal articles and books) fail to make legible a significant amount of African scholarly production, thus under-estimating the amount of research activity on the continent.
3. Many African universities do not take a strategic approach to scholarly communication, nor utilise appropriate ICTs and Web 2.0 technologies to broaden the reach of their scholars' work or curate it for future generations, thus inadvertently minimising the impact and visibility of African research.

The first challenge listed here speaks to a global phenomenon that is defined by macro-level disparities in resources, infrastructure, capacities and population sizes. These disparities help make sense of Africa's various higher education predicaments, but they cannot be changed by a small research project such as SCAP. Thus, while the SCAP team

[1] Juliana Chan (2011) Asia: The growing hub of scientific research, *The Asian Scientist*, 3 April 2011. Available at: www.asianscientist.com/features/asia-future-hub-scientific-research/

[2] The Impact Factor – a metric devised by the Institute for Scientific Information (ISI) in the 1960s and now maintained by the Thomson Reuters Web of Science (WoS) – purports to measure the "impact" of a journal within a given academic field and, by proxy, suggest an evaluation of the relative impact of the articles published within it. The Impact Factor is a number representing the average number of citations that a journal's articles collectively receive during a two-year period. Thus if the impact factor for a journal in 2011 is 4, then the articles published in that journal in 2009 and 2010 collectively averaged four citations each in 2011.

was always cognisant of this overriding context that structured the scholarly communication possibilities in Africa, we did not focus on tackling them, but rather on the latter two challenges, which were located in our sphere of influence.

The second challenge – concerning scholarly visibility metrics – is also a global phenomenon, but largely confined to the academic community and a matter of intense debate. Traditional scholarly metrics are under threat by funders, research assessment officers, open access publishers and alternative metrics advocates who seek to utilise the capacity of Web 2.0 platforms to gain a more accurate and comprehensive sense of the impact that a scholarly output has (beyond the blunt journal citation aggregations that WoS provides). Because many scholarly outputs from Africa are not published in WoS-listed journals – but rather in a plethora of other outlets – they do not get measured in the prestige-based indices that render so much of African research (including reports, briefs, conference papers, seminar presentations, consultancy work, etc.) invisible.[3] The conclusion that many analysts draw from this is that no research of value is taking place on the continent – an inappropriate conclusion given the limited perspective it provides of African research production. Therefore, in our effort to raise the visibility of African research, we advocated for scholars worldwide to use a more comprehensive, precise and "complementary" set of metrics than those currently used to assess scholarly visibility.

The third challenge – concerning the lack of strategic engagement with scholarly communication by African universities – was the main issue that SCAP hoped to change. This is a challenge located largely within the boundaries of the continent, the product of choices and priorities by African governmental ministers, university managers and academics. As a research and implementation initiative located in Africa, committed to locally appropriate solutions, SCAP decided to intervene at this level where we could have the greatest effect. It was our belief that if we could research and advocate a more strategic approach to scholarly communication, we could not only raise the visibility of Southern African research, but also offer a model to other African universities seeking to do the same. This would be based on strategic policy innovations, open access principles and Web 2.0 ICT platforms.

The universities that SCAP engaged were the:

- University of Botswana (UB)
- University of Cape Town (UCT)
- University of Mauritius (UoM)
- University of Namibia (UNAM)

[3] Mouton (2010: 8) states that "international publication in the ISI-journals (19,154 articles for the total period 1990–2007) only constitutes about one third of total social science scholarship in the [Southern African] region." This corresponds with the ratios given by UNAM in a recent research report that says, "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), meaning that 66% of outputs were "other" types (2009: 9), guaranteed to be invisible according to the ISI/WoS index. This high production ratio of non-indexed materials in the region is discussed in more detail in Chapter 5.

Scholarly in/visibility

Scholarly communication comprises a broad range of activities "including the discovery, collection, organisation, evaluation, interpretation, and preservation of primary and other sources of information, and the publication and dissemination of scholarly research" (Cullyer & Walters 2008: 1). In this report, it will largely focus on the communication activities necessary for research collaboration and output dissemination. However, the effectiveness of this communication – especially output dissemination – is shaped by the fact that audience attention is a scarce resource. There are more scholarly outputs produced than can be equally engaged by the academic community, meaning that scholarly outputs are in a state of competition with each other, with some achieving greater "visibility" than others.

According to Abrahams, Burke and Mouton (2010: 22), "visibility is comprised of a number of features including visibility of authors and content through abstracting and indexing databases, through availability in library collections, through web-based publishing, and visibility of research performance as measured through various bibliometric measures such as citation counts and impact factors." It is not simply publication in a journal listed by the Thomson Reuters WoS, which has for a long time been the standard by which visibility is assessed. Rather:

> *Visibility of scholarly communication means that specific knowledge and authored works can be discovered because they are traceable. More importantly, in this regional context, visibility means that research on subjects and themes of local interest should be made public in ways that will enable the relevant actors (researchers, students and development practitioners) to easily identify local research that can be a valuable contribution to society, whether for future knowledge production or for development practice.* (Abrahams, Burke & Mouton 2010: 22–23)

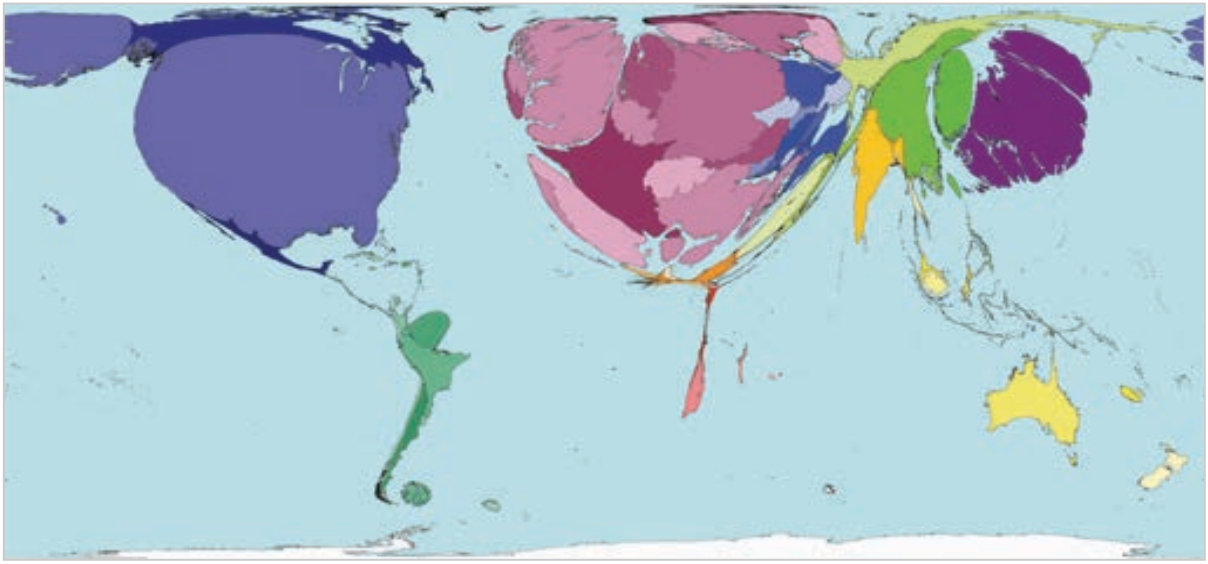
This means that visibility amounts to more than just "accessibility" (such as when an object is available in hard copy at a university library). It means *digital* accessibility. Moreover, it means that a scholarly object is profiled (usually through metadata) in such a way that makes it easily findable by search engines or databases through a relevant search string. Without such metadata, or without the object shared in a format that allows crawlers to search its text (such as PDFs and HTML pages rather than TIFFs and JPGs), then the digital object remains virtually invisible. In those cases, it is technically accessible, but essentially invisible because it is not locatable using standard searching procedures. Thus, visibility requires a communications strategy, one of the ingredients missing in many African universities' and scholars' approach to research dissemination.

This lack of strategy is partially responsible for the disorienting image in Figure 1.1 which visually represents the relative contributions made by each country to global scientific research output as published in ISI-listed journals (in 2001). The fish-eye effect of this perspective squeezes the massive African continent down to the size of a narrow peninsula, thus begging for explanation. However, this startling representation is indicative not of the absence of research activity per se, but of the continent's lack of

representation in "international" journals and its inefficiency at disseminating research findings in a more strategic, representational manner. As Tijssen (2007: 307) points out:

> *It is important to keep in mind that these diminishing shares of African science do not reflect a decrease in an absolute sense, but rather an increase less than the worldwide growth rate. During the last 15 years, African output has in fact risen by 38%, up to some 46,000 articles in 2001–2004.*

Figure 1.1 Representation of global scientific output, by proportion of ISI article production[4]



Chan, Kirsop and Arunachalam (2011: 1) further caution against an over-simplified reading of this cartographic representation, in that "this inequity has led to the misguided notion that little, if any, research of substance is generated in the global South, and that the needs of researchers in poor countries are therefore met solely by information donation from the North."

However, given that this map is based on data from 2001, it likely shows Africa in a "thicker" visual profile than if the numbers were current. It does not account for the explosion of research production from places like China, which would render Africa's profile even "skinnier", despite the continent's absolute increase in high-rated scientific publications.[5] Thus the challenges regarding Africa's visibility remain a persistent concern even as scholarly communication trends evolve.

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[4] The map illustrates the relative proportions of ISI-rated scientific papers published per million people in 2001. This covers articles in physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering, technology, and earth and space sciences. The number of scientific papers published by researchers in the USA was more than three times greater than the number published by the second-most-publishing nation, Japan. Source: www.worldmapper.org/display.php?selected=205 [accessed 2 September 2010]. Image copyright SASI Group (Univ. of Sheffield) and Mark Newman (Univ. of Michigan). Permission has been granted to reproduce this figure under the terms of the Creative Commons Attribution License.

[5] This particular Worldmapper image has not been updated since 2001 according to Professor Mark Newman (private communication), one of the creators of the map. Other evidence that we have drawn from Tijssen (2007) and Mouton (2010) suggests that an updated map would make Africa appear even less visible. Indeed, due to its comparatively low level of outputs in ISI-rated journals, Africa is often lumped into a "rest of the

Furthermore, as Mouton (2010: 6–7) explains:

> *The ISI-journals have a distinct Anglophone bias which leads to poor coverage of Francophone and (to a lesser extent) Lusophone countries in SSA [sub-Saharan Africa]. In addition the ISI's coverage of small journals in developing countries is not good. The latter is a result of the policy of the ISI to include only the highest impact journals in the world which means that many journals in the developing countries (which have small circulation lists and hence restricted readerships) are thereby automatically excluded. All of this means that a significant proportion of African social science is simply not visible in international indexes.*

Hence, because so much African scholarship remains outside of the ISI/WoS index, and because continental institutions and scholars have not applied a cohesive or strategic approach to disseminating outputs, "there is a preponderance of unpublished research, including conference and advocacy papers, technical and consultancy reports, theses and dissertations ('grey' literature) which is not easily accessible because it is generally not held in university libraries or available online" (Abrahams, Burke & Mouton 2010: 29).

Of course, institutions around the world face new imperatives to increase investment in research production and knowledge management. For research institutions, this means adapting a strategic focus on content curation and profiling so as to boost institutional reputation, remain competitive in global institutional rankings, provide support services that academics rely on to conduct research and collaborate internationally, and maintain compliance with grant funder mandates.

For African research higher education institutions (HEIs) there are additional pressures for developing scholarly communication practice and ramping up the institutional content curation effort. For instance, faced with limited research grant funding and constrained by international publishing opportunities, African HEIs must choose whether they want to support local (particularly niche) research by making outputs from that effort freely and openly available. Doing so would encourage the production of local scholarship and ensure that African scholars have access to locally relevant content by authors embedded in the context. But failing to do so would wither nascent research buds on the continent, forcing greater reliance on externally produced research. As Abrahams, Burke and Mouton (2010: 24) point out:

> *Students, researchers and practitioners are likely to cite and utilise authored works from abroad over work from the region because of high versus low visibility in particular areas of study, such as in genetics, education and environmental engineering, where research output is particularly low. Thus, low visibility and low accessibility are major factors in slowing down research production on the sub-continent, thus limiting the application of knowledge for development purposes.*

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world" category in various research impact reports. (See for instance the National Science Foundation's *Science and Engineering Indicators 2012 Digest* section on "Research Outputs: Publications and Patents" at: www.nsf.gov/statistics/digest12/outputs.cfm#1)

The need for research to address development is not unique to the African context, but the links between dissemination, innovation and development increase the imperative (and prospective return) for African universities to profile and curate their own research. In line with this approach, the knowledge production enterprise funded by taxpayers needs to move beyond a "closed" academic enterprise (in which knowledge exchange typically happens on a scholar-to-scholar basis by means of the traditional journal article or book chapter) to an "open" exchange process that includes scholar-to-community and scholar-to-government activities (utilising a broad range of content formats and genres).

Open access for development

A key way to enhance the visibility, reach and effectiveness of African research is by communicating it according to open access principles. By "open access", we mean that scholarly research outputs are made freely available:

> *on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles [and other output types], crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.* (BOAI 2002)[6]

Making all African research outputs clearly profiled (through metadata), curated (on stable digital platforms) and freely available to the public (at no cost to the user) would give African research a higher likelihood of not only shaping academic discourse because it would be more visible to scholars, but of getting into the hands of government, NGO, industry and civil society personnel who can leverage that research for economic growth and development.[7]

According to Chan, Kirsop and Arunachalam (2011: 1), the growing volume of open access resources "provides a far greater degree of freedom for researchers to exchange and collaborate, for knowledge to be translated into useable forms by frontline health workers, and for emerging technologies such as text mining and semantic tagging for faster knowledge discovery to be used." Moreover, research shows that open access publication increases the likelihood that a scholarly output is both read and downloaded at a higher rate than non-open access publications (Gargouri *et al.* 2010).

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[6] A number of groups and organisations – in Budapest (2002), Bethesda (2003) and Berlin (2003) – have defined open access from slightly different perspectives. For a useful discussion of open access, see: Suber (2012); Peter Suber's "Open Access Overview", available at: http://legacy.earlham.edu/~peters/fos/overview.htm; and the OASIS (Open Access Scholarly Information Sourcebook) article, "Open Access: what is it and why should we have it?" Available at: www.openoasis.org/index.php?option=com_content&view=article&id=130&Itemid=390

[7] For example, "The publicly funded Human Genome Project and its freely reusable data generated a massive 141-fold return on investment in economic returns alone [and] 30% more new clinical products than the privately funded, closed genome-sequencing project of the US biotech firm Celera Genomics" (Neylon 2012).

However, at the moment, "many research publications by African researchers, especially those focused on domestic or regional African issues and problems, are not accessible through the modern ICT facilities" (Tijssen 2007: 324). Furthermore, "multiple stakeholders including university presses, libraries, and central IT departments are challenged by the increasing volume and the rapidity of production of these new forms of publication in an environment of economic uncertainties" (Harley 2008: 2).

This means that African universities – many of which are only now beginning to develop research agendas of their own – must also establish new capacity, processes, governance structures, business models and policy frameworks for open access communication. This is not a trivial matter, nor is it easily achieved. Yet despite the burden that a move to a strategic engagement with open access would mean for most African universities, SCAP remains convinced that it must proceed.

Consider the broader open access context in which African scholars must chart their path: in the past few years, major funding bodies in the EU, the UK and the USA have legislated open access mandates, requiring that all research funded by them must be made open access (see Chapter 4 for more details on funder mandates). This will raise the visibility of the North's own research outcomes while (comparatively) lowering the visibility of Africa's research, which is not produced under a similar mandate. The flood of research that will emerge from the North will further marginalise the relatively small volume of outputs coming from Africa. This research will not only be openly shared, but will be curated and described with metadata, making content interoperable, searchable and indexable at unprecedented levels.

These global developments – which will likely be matched in other parts of the world soon – require urgent action from African institutions. SCAP believes that this marks an opportunity for African universities to move beyond playing "catch-up" with the North to leveraging new technologies and approaches to address local ambitions while participating in the international scholarly landscape.

Technology and capacity

Africa's response to this changing communications environment will require not only strategic dissemination policies and open access publishing practices, but appropriate use of new technologies that are reshaping the scholarly communication environment. The advances in ICTs over the past years – such as broadband internet, Web 2.0 platforms and inexpensive digital storage devices – have transformed scholarly communication, yet, to date, many ICT innovations have failed to act as an equalising force in academic collaboration and contribution on the continent. In some ways, they have reinforced familiar global inequalities that resemble a "digital divide" (Fuchs & Horak 2008) between the visible and the invisible.

However, this need not be the case in the future. Most of the technologies required for engaging in open access communication and visibility-raising dissemination are either already available at African institutions, freely available on the internet, or relatively inexpensive to purchase. For instance, many African universities possess high-resolution

scanners, institutional repositories, websites, computers, servers and access to the internet. They also have access to the same free Web 2.0 technologies[8] – such as Academia.edu, ResearchGate, Mendeley and FigShare – that have allowed individual scholars elsewhere to enhance their scholarly profiles and collaborative opportunities. The problem is that these have not been incorporated into a strategic plan concerning scholarly communication. They have been utilised in an ad hoc fashion, often the pet project of a lone innovator, but not part of a systematic approach to an institutional issue. Thus the solution is not simply to have "access" to current technologies, but to have a plan for how to use them.

Moreover, the incorporation of new ICTs into an existing scholarly ecosystem requires the skills and capacity to support and maintain them. This is often lacking at African universities where training efforts focus on other aspects of a job (such as book cataloguing for librarians rather than DSpace metadata capturing of alternative outputs). It is also due to a lack of funding to hire and train new people.

Thus, each of these elements is important for raising the visibility of African scholarship: an open access dissemination strategy, access to and use of Web 2.0 technologies and the human capacity and skills to use them. Each of these exists within reach of most African universities, but only if they are made a priority. The SCAP project was initiated to help achieve that.

Project description

Funded by the Canadian International Development Research Centre (IDRC), the three-year SCAP programme, which commenced in 2010, built on the findings of a number of previous studies and interventions[9] to address the particular challenges faced by African universities as they attempt to align their scholarly communication practices with rapidly evolving global standards in a manner that reflects their core institutional values.

SCAP was a research and implementation initiative that sought to demonstrate, through the use of case studies and the development of a research evidence base, the financial, institutional and technical feasibility of universities in Southern Africa to assume greater responsibility for publishing their research in an open manner. Its central aim was to increase the visibility of African research and scholarly communication.

The primary question driving SCAP's research was:

> *What is the current state of scholarly communication in (Southern) African universities?*

[8] Web 2.0 (or Web 2) in the context of this project refers to advanced internet technology and applications such as blogs, wikis, social networking, bookmarking and RSS (really simple syndication) feeds. These technologies are commonly associated with web applications that facilitate interactive information-sharing, interoperability, user-centred design and collaboration.

[9] At the local level, these included UCT Centre for Educational Technology projects funded by the Shuttleworth Foundation in the period 2006 to 2009, namely the OpeningScholarship project and the UCT Open Educational Resources initiative, as well as other initiatives such as the IDRC-funded PALM Africa project. At the regional level, the programme was strongly informed by prior research and networking activity of the Southern African Regional Universities Association (SARUA) and the activities of the IDRC Open African Innovation Research and Training (OpenAIR) intellectual property research programme.

To answer this, SCAP visited each partner university four times over the course of two years in order to conduct interviews with scholars, librarians and managers, and to gather data through seminars, "change laboratory" workshops and surveys (a process discussed in detail in Chapter 2).

A secondary question driving our research was:

> *How can the use of information and communication technologies (ICTs), technology platforms and open access publishing models contribute to the improvement of strategic scholarly communication, and what institutional structures are needed to support such an approach?*

To answer this, SCAP engaged in a series of institution-based implementation initiatives at each pilot site, stimulating the research environment and observing the results (discussed in detail in Chapter 6).

The specific objectives of the project were to:

1. Map the current status of research dissemination in four selected universities from four Southern African countries.
2. Understand the policy, ICT infrastructure and administrative support systems needed to integrate scholarly publishing and dissemination at these universities.
3. Work with partners from selected universities to support the use of open source platforms that could interface with outputs such as journals, books and conference proceedings.
4. Build capacity in managing and sustaining an integrated scholarly communication system.
5. Explore the costs and benefits resulting from open access communication.
6. Develop complementary metrics that could align quality concerns, recruitment, recognition and rewards systems in order to promote greater access to knowledge.
7. Engage with institutional and governmental policymakers to raise the visibility of African research.

SCAP was originated in response to the need to grow the profile and global competitiveness of African research output. The project's primary concern was with dissemination out of universities, rather than issues around building research capacity. That said, it acknowledged the intrinsic link between research processes and communication, and the importance of examining current scholarly communication policy, practice and infrastructure against the institution's wider cultural historical context.

The complex nexus of issues and the interrelationships between low research productivity, declining annual national expenditure on research and development, and other national and regional factors affecting scholarly productivity has been documented in other studies, such as those by Abrahams *et al.* (2008), ASSAF (2006), Cloete, Bailey and Maassen (2011), Habib and Morrow (2007), Harle (2010), Kotecha, Walwyn and Pinto (2011), Kotecha, Wilson-Strydom and Fongwa (2012), Mouton (2010) and Mouton *et al.* (2008). The SCAP research and implementation process built on this complex-systems approach seeking not only to understand institutional scholarly communication

activity systems across micro (department/faculty/unit), meso (institutional) and macro (national/regional) levels, but also to grasp how these systems have been shaped by historical factors over time.

SCAP operated on the assumption that although African higher education environments faced a myriad of challenges, there was an opportunity to increase the production and visibility of scholarly outputs in Africa through the use of Web 2.0 technologies, digital publishing and curation platforms, and confederated computing and content hosting structures.

But before these opportunities could be harnessed, each institution's scholarly communication ecosystem had to be described, analysed and understood – a process necessitating significant research (the results of which are discussed in Chapter 5). It also required an ambitious advocacy component that required us to engage with university scholars, librarians and managers, as well as other higher education stakeholders in government and civil society.

This report shares the results of SCAP's research and advocacy efforts, describing not only the scholarly communication ecosystem that currently exists at this partner institution, but the opportunities available for raising the visibility of its scholarship. It concludes with a discussion of our research findings and a series of recommendations – aimed at the national government, university management, university academics and research funding agencies – that we believe would enhance the communicative and developmental potential of the university's research.

Chapter 2.
Project components and methodology

The SCAP programme arose from an 18-month scoping process that took place in 2008/2009 under the direction of Eve Gray, an African scholarly communications and open access expert (Gray 2006, 2010; Gray & Kahn 2010; Gray, Trotter & Willmers 2012). Hosted jointly by the Centre for Educational Technology and the Research Office at the University of Cape Town, SCAP was launched in March 2010.

Selection of pilot sites

One of SCAP's first tasks was to identify the three other universities – along with UCT, SCAP's host institution – to participate as partner sites. Though SCAP hoped that our work would be able to impact the discourse on scholarly communication throughout Africa, for practical (financial, logistical and linguistic) reasons, we decided to focus our research on universities in the Southern African Development Community (SADC) region. Through a collaborative process with the Southern African Regional Universities Association (SARUA),[10] SCAP assessed potential university partners against a series of criteria such as level of research engagement, history of dissemination activity, as well as other characteristics such as size and language.

The four institutions in the SCAP sample happened to be in the most research-productive countries in the SADC region according to the Thomson Reuters ISI indexes. As Mouton *et al.* (2008) show, South Africa is the most productive country in the region, producing an average of 80% of all output in SADC for the period 1990–2007 (119 papers per million of population compared to the regional average of 29 papers per million). Botswana was the second most productive country, with 96 papers per million, while Mauritius and Namibia were the only other two countries with productivity levels above the regional average.

[10] SARUA is a regional higher education and vice chancellors forum operating in the SADC region with a strong open access strategic focus. See: www.sarua.org/

Table 2.1 Ranking of SADC countries in terms of ISI papers per million of the population (2007)

Country	Total population millions (2007 est.)	ISI papers (2007)	Papers/million of population
South Africa	47.0	5,505	119.3
Botswana	1.8	172	95.5
Mauritius	1.2	47	39.1
Namibia	2.0	70	35.0
Zimbabwe	12.3	251	20.4
Swaziland	1.1	18	16.4
Malawi	13.6	209	15.4
Zambia	11.5	155	13.5
Tanzania	39.3	492	12.5
Madagascar	19.4	150	7.7
Lesotho	2.1	13	6.2

(Source: Mouton *et al.* 2008)

Despite concerns about the value of the ISI system (which we detail in Chapter 3), these indicators were useful in terms of categorising the study sites in relation to other SADC higher education institutions (HEI) and their apparent research productivity. The fact that SCAP was working with the four most research-productive HEIs in the region meant that we could explore correlations between size, output productivity and capacity in determining how feasible it was for regional institutions to profile the knowledge they produce. Though many differences exist between SADC institutions, if the most productive of these faced visibility challenges, then it stood to reason that the others would face similar problems, perhaps even more acutely.

Once the universities of Botswana, Mauritius and Namibia were nominated, SCAP reached out to their vice chancellors to propose a partnership. We sought to obtain senior management's mandate to engage with its academic community and to create the necessary buy-in for us to research this community's scholarly activity. Institutions were invited to designate research coordinators (RCs) – senior academics with an interest in open access practices – who would facilitate identification of pilot sites within the institution and to appoint research assistants to assist with data collection and other project work.

We believed that it was not feasible, given time frame and resource constraints, to research the scholarly communication practices of academics throughout the entire university; therefore we focused on pilot sites that were (hopefully) to act as microcosms of the institution, allowing us to extrapolate lessons learned and recommendations for sharing with the rest of the institution – and to other African institutions.

We realised that scholarly communication in these contexts would be impacted by varying institutional, disciplinary and cultural norms; we therefore always tried to remain clear as to which structural forces were doing the most to shape a particular

activity. While this minimised our capacity to generalise across all four sites in certain respects, it also allowed us to understand the diversity of these contexts and gain a nuanced sensibility about their challenges and opportunities. With this point in mind, the following served as our pilot sites:

- UB: Department of Library and Information Studies (DLIS) in the Faculty of Humanities (FoH) – 18 members
- UCT: Southern African Labour and Development Research Unit (SALDRU) – an independent research unit in the Faculty of Commerce (Comm) – 32 members
- UoM: Faculty of Science (FoS) – 55 members
- UNAM: Faculty of Humanities and Social Sciences (FHSS) – 77 members

SCAP approached each of the study sites as unique contexts with independent historical legacies and research communication cultures. Therefore efforts were made to ensure parity in project activity across the sites. However, the principal investigation (PI) team acknowledged that the approach to UCT would be slightly different because we were already "embedded" in the institution, a fact that both limited and expanded the kinds of insights we could gain about it.

Moreover, we understood that UCT was atypical in both Africa and Southern Africa. As the highest-ranked university on the continent[11] with a history stretching back to the 1820s,[12] UCT enjoyed significant financial, infrastructural and human capacity advantages over the other three universities. It also boasted a significantly larger academic staff: according to the most recent public figures, UCT[13] had 2,200 academic staff, UB[14] had 877, UNAM[15] had 340 and UoM[16] had 293. Nevertheless, these differences did not invalidate a comparison across institutions, but simply begged for continued recognition of the structural and historical differences that defined them.

The principal investigation (PI) team

SCAP research was led by a PI team based in the Centre for Educational Technology (CET), a department in the Centre for Higher Education Development (CHED) at UCT. This team comprised a research lead, a research officer, a research assistant, the programme manager and the programme director. All research work was undertaken in consultation with RCs at participating sites, but the ability of RCs to formulate and conduct independent research was constrained by the fact that they held academic posts with concomitant teaching and administrative loads. In addition, the RCs had been placed in the role because of their interest in the area, not necessarily their expertise. There was therefore significant capacity development entailed in the exchange between the PI team and institutional research teams.

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[11] According to the 2012–2013 Times Higher Education World University Rankings, available at: www.timeshighereducation.co.uk/world-university-rankings/2012-13/world-ranking/region/africa
[12] Ages of participating institutions – University of Botswana: 30 (founded 1982), University of Cape Town: 183 (founded 1829), University of Mauritius: 47 (founded 1965), University of Namibia: 20 (founded 1992).
[13] UCT (2012c)
[14] UB Facts and Figures (2013), available at: www.ub.bw/content/id/1989/Facts-and-Figures/
[15] SARUA profile of UNAM, available at: www.sarua.org/?q=uni_University%20of%20Namibia
[16] UoM: History (2011), available at: http://sites.uom.ac.mu/induction/index.php?option=com_content&view=article&id=46&Itemid=1

The SCAP programme was designed around four rounds of institutional site visits to each of the participating sites. These visits allowed the PI team to build institutional relationships, collect research data and formulate a framework for implementation activity. The PI team also gave presentations, ran workshops, conducted interviews and engaged in individual conversations with a wide range of stakeholders on each visit in order to stimulate discussion around scholarly communication.

The site visits also gave the PI team a more nuanced, ethnographic understanding of the lived reality of the pilot academics. Team members were able to see (and sometimes experience) first-hand the administrative, technological and social qualities defining scholarly communication activity at our partner sites. (For instance, by using the internet at some universities, we could see what scholars meant when they complained of low bandwidth; or by trying to source official information from certain universities, we could identify with their scholars' "red tape" woes.)

Methodology

SCAP's overall research design was based on the case study approach. We adopted this so that we could conduct in-depth research at four universities in four countries across different faculties and disciplines and so that we could experiment with a diverse set of intervention strategies. The case study approach allowed us to probe deeply into the different field sites (Flyvbjerg 2011; Mitchell 1984) while at the same time ensuring that some of our data would be comparable across them.

SCAP's methodological approach could be categorised as "developmental intervention-based research", as it went beyond a concern for only data collection to that of research as praxis, aiming to enable participants to understand and change their realities. To help develop capacity and stimulate our pilot environments, the programme incorporated implementation processes for experimenting with new approaches to open scholarly communication that ran alongside our research process.

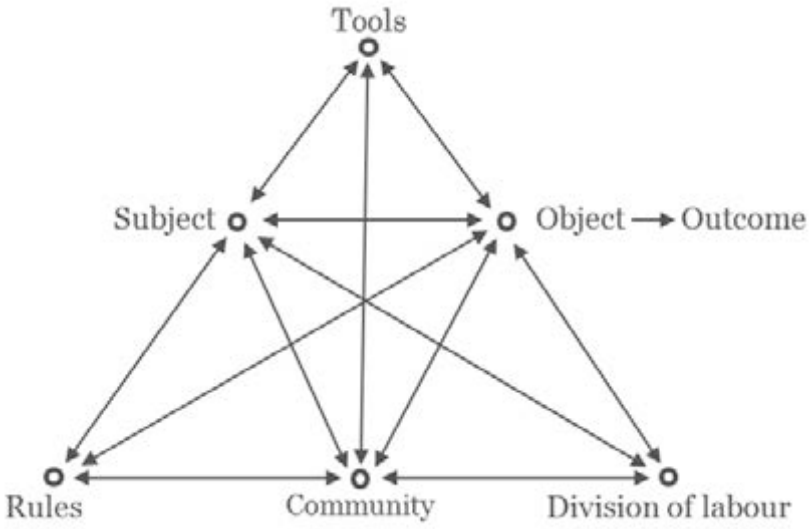
Cultural Historical Activity Theory (CHAT)

SCAP used Cultural Historical Activity Theory (CHAT) to inform our research approach. We chose CHAT because it is useful for identifying obstacles in complex activity systems, especially those that are structured by deep, complicated and sensitive cultural and historical elements.

With its origins in Soviet social psychology in the earlier part of the 20th century – in particular the work of Vygotsky and Leont'ev (Chaiklin & Lave 1993; Daniels 2008) – the key tenets of early Activity Theory is that activity is mediated action and that the social and the technical are mutually constituting. These tenets were then developed by Engeström (1987, 2000; Cole & Engeström 1993) into the CHAT approach that we utilised, which locates the activity systems concept at its centre.

An activity system is a collective formation in which a *subject* (here referring to a group, not an individual) acts purposefully towards the fulfilment of an *object* and a set of *outcomes*. Figure 2.1 shows a representation of an activity system with its constituent nodes placed at distinct points on the triangle.

Figure 2.1 Representation of an activity system in the CHAT tradition



The diagram above represents the different nodes that constitute an activity system. Starting with the top horizontal line, a *subject* seeks to achieve a purpose (the *object*) which will result in an *outcome*. In our research, the subjects were academics seeking to produce and disseminate research (the object) so that they could contribute to national development, secure promotion, comply with an institutional mandate, etc. (outcomes).

During this process, subjects utilise *tools* (the top node) such as computers, books, personal credentials and other artefacts to achieve their purpose. This means that all action is "mediated" by the use of such tools.

Along the bottom horizontal line are three further nodes that also serve to mediate action: rules, community and division of labour. According to Engeström (1996: 67), the *rules* refer to the explicit and implicit regulations, norms and conventions that enable and constrain action within a system. In our context, these *rules* were often disciplinary norms (informal) and institutional policies (formal).

The *community* comprises the people and groups sharing the same general object as the subject. In our context, these were typically funders, colleagues, librarians, managers and students.

Lastly, the *division of labour* refers to the horizontal division of tasks between members of the community and the vertical division of power and status. In the case of academics, the horizontal division involves relationships with peers (inside and outside the university) in the production and communication of research, while the vertical division involves relationships with research and university managers, as well as national research structures. The various non-academics listed in this node also have their own activity systems that are devoted to different objects. These other activity systems exist in fluctuating states of tension and alignment with the first activity system, depending on how they are structured and engaged.

A key virtue of this design is that it presents activity systems as "ecosystems", in which stimulation or change in one node leads to transformations throughout the entire system. For instance, the introduction of new tools (repositories, etc.) or the alteration of rules (policies, etc.) would impact the entire system. Thus, we thought of these activity systems as ecosystems that were unique, dynamic and sensitive to change.

CHAT principles

In CHAT theory, activity systems are defined by five key principles:

1. *Collective activity*: "A collective, artifact-mediated and object-oriented activity system is taken as the prime unit of analysis. Activity systems realise and reproduce themselves by generating actions and operations" (Engeström 2001: 136).
2. *Multi-voicedness*: "An activity system is always a community of multiple points of view, traditions and interests. The division of labour in an activity creates different positions for the participants [and] the participants carry their own diverse histories" (Engeström 2001: 136).
3. *Historicity*: "Activity systems take shape and get transformed over lengthy periods of time. Their problems and potentials can only be understood against their own history" (Engeström 2001: 136).
4. *Contradictions*: Instability (internal tension) and contradictions are the "motive force of change and development" (Engeström 1999: 381). "Contradictions are not the same as problems or conflicts. Contradictions are historically accumulating structural tensions within and between activity systems" (Engeström 2001: 137).
5. *Expansive learning*: "Activity systems move through relatively long cycles of qualitative transformations. As the contradictions of an activity system are aggravated, some individual participants begin to question and deviate from its established norms. In some cases, this escalates into collaborative envisioning and a deliberate collective change effort. An expansive transformation is accomplished when the object and motive of the activity are reconceptualised to embrace a radically wider horizon of possibilities than in the previous mode of the activity" (Engeström 2001: 137).

Change laboratories

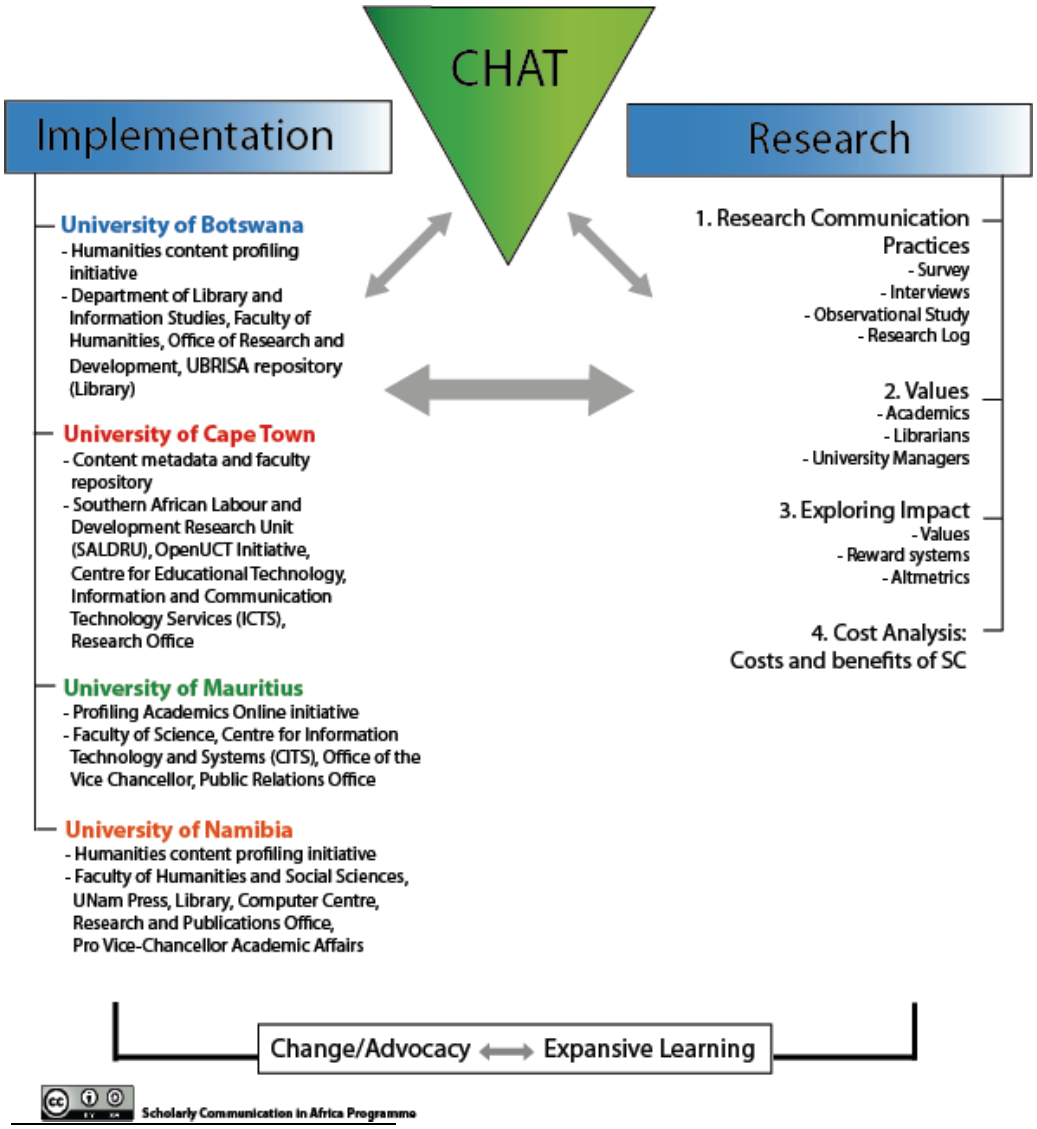
Key to the CHAT methodology are "change laboratories" (Engeström, Miettinen & Punamäki 1999). These are workshop-like events where participants collectively identify contradictions in their activity systems. In this manner, they explore interventions that would align those systems so they can better achieve their object. SCAP took it as axiomatic that each of our pilot sites had misalignments that could be identified and re-aligned so that they could operate optimally. For many change lab participants, the CHAT approach offered a useful method for comprehending the complexity of their scholarly communication ecosystems, inspiring them to look beyond technical (tools-oriented) solutions to their challenges and to consider them from the vantage of each

node and connection.[17] The knowledge we gained from our change labs was contextualised through data from our research strands. Together these generated rich descriptions of the conditions under which scholars conduct and communicate research.

Research components

SCAP's research comprised three interlinked components: expansive learning and change/advocacy; research strands; and implementation initiatives. These components are shown in Figure 2.2. With CHAT at the centre, the four research strands are listed on the right, the four implementation initiatives are listed on the left and the expansive learning element connects the two at the bottom. But as the arrows show, these were mutually constituting components, reflexively influencing each other as they progressed.

Figure 2.2 Diagrammatic overview of the SCAP operational approach



[17] SCAP's adoption of CHAT was unusual in that our study sites did not specifically request interventions around scholarly communication, as typically occurs with CHAT/change lab engagements. In fact, many participants only became aware of the contradictions in their activity systems by exploring them with us.

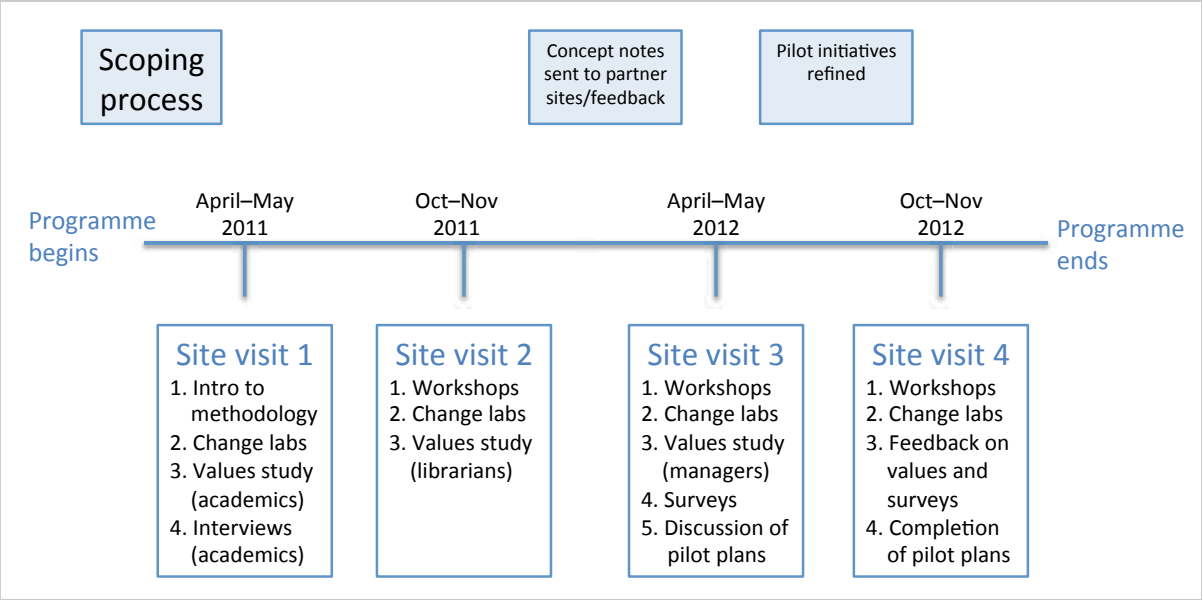
Expansive learning and change/advocacy

The expansive learning component involved SCAP's use of CHAT with its emphasis on conscious stimulation of and reflection on the scholarly communication activity system amongst staff members in each study site. This was implemented through iterative change laboratories, workshops and advocacy work. These CHAT "techniques" animated and integrated the other two components: the research strands that examined the scholarly communication ecosystem in each site and the technology implementation initiatives.

This research component involved rigorous documentation of the participatory processes involved in the change laboratories and site visits. SCAP tried to incorporate the analytical power of CHAT into every activity and interaction. But most pilot site participants' experience of CHAT was most keenly felt in the change laboratory workshops that we held at each institution. It was on those occasions that we explained the CHAT methodology and how its discursive tools could help us to elucidate the pilot site's scholarly communication activity system and develop an intervention that improved its functionality.

At each university, the change lab participants were typically members of the relevant pilot site, although university managers and librarians also attended sessions. Numbers varied between seven and 13, with a small core who participated throughout and others who came and went. The change lab workshops were full-day sessions, contributing to a broader research and advocacy programme during the PI team's week-long site visits. Figure 2.3 shows when we conducted the change labs and how this coincided with other research we were carrying out at the host institutions.

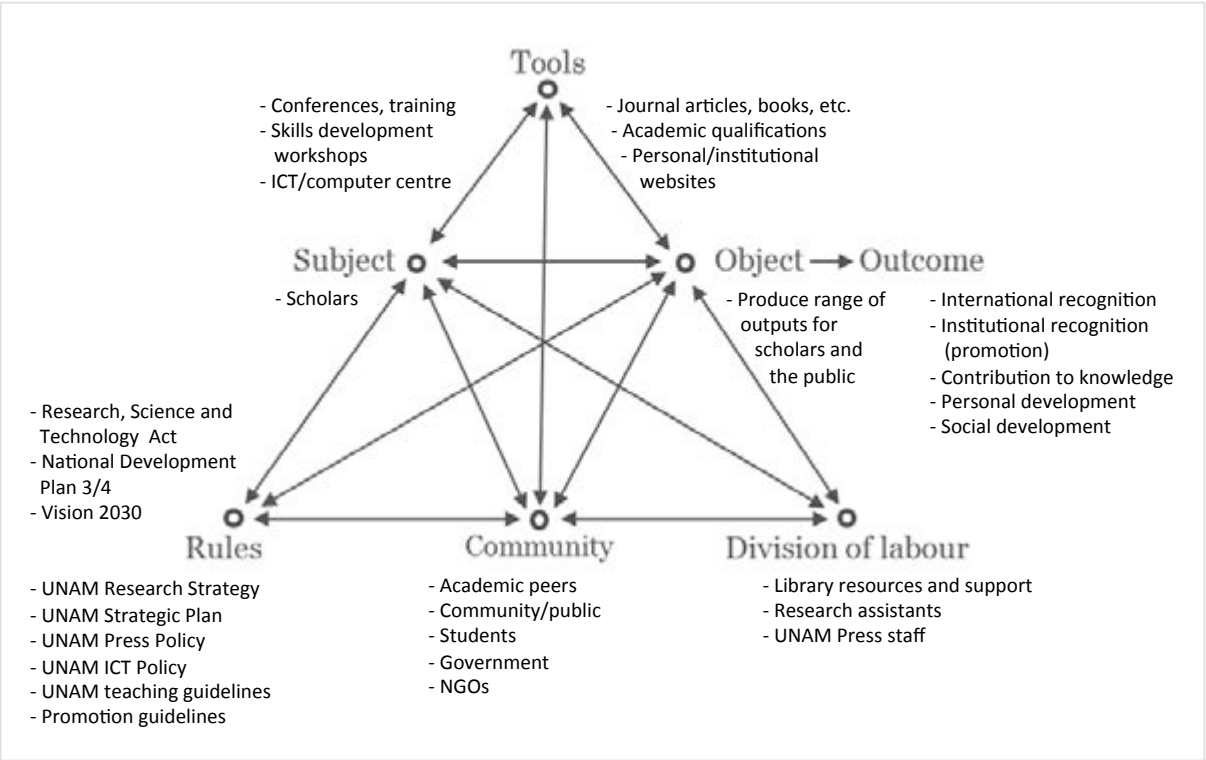
Figure 2.3 Overview of SCAP research and implementation schedule



In the first change lab workshops we held at each institution, we started by introducing the participants to the idea of scholarly communication as an activity system. We explored CHAT principles, discussed the virtues of the CHAT triangle as a heuristic and analytical device, and asked participants to identify areas where there were challenges or tensions in their scholarly communication ecosystems.

In the second workshops, we started populating the activity system triangles with the information given by the pilot participants, identifying the subject, object and outcome of the system, as well as the tools, rules, community and division of labour. Once all of the fields were populated, we started identifying the challenges, contradictions and opportunities within the activity systems so that we could understand where misalignments were occurring and how we could re-align them through an implementation initiative. The data from these workshops gave us a lot of the information we required to write up concept notes for the various implementation initiatives that we ended up pursuing. While most participants initially found this CHAT triangle process awkward, they quickly began to see its descriptive and explanatory power; however, once we established how each node was impact the others, it allowed them to see their work activity in a different light. Figure 2.4 shows a completed triangle.

Figure 2.4 UNAM FHSS activity system triangle populated with change laboratory material



In the third set of workshops we re-presented the fully populated activity system triangles so that participants could amend and verify them. The PI team also shared the concept notes for the implementation initiatives, eliciting useful feedback in the process.

In the fourth and final set of workshops the PI team presented preliminary findings from the research strands, which enabled a "mirroring" process (i.e. the final stage of the

expansive learning cycle implicit in the CHAT process). By "reflecting" scholars' activity systems to them in a descriptive and analytical fashion, we were able to secure crucial feedback from them for eventually arriving at our concluding findings (which are contained in this report). During that final visit, the participants also assessed the progress of the implementation initiative.

The change laboratory process provided significant data on each site's scholarly communication activity system and proved to be an invaluable forum for engaging with academics, librarians and managers.[18] For many, our workshops provided a much-needed space for participants to be self-reflexive about their scholarly communication activity. A number also took advantage of the episodic attendance of high-ranking managers to share their (often critical) perspectives with administrators with the clout to change policy.

As part of the expansive learning cycle, in addition to the change labs that we conducted, we collected institutional data through the many meetings, conversations and informal interactions we had with institutional stakeholders during our site visits.

Research strands

SCAP's research revolved around four strands: research and communication practice, values, impact and costs. Here we discuss the processes employed to carry out this research and how we integrated the materials in our analysis.

Research and communication practice

The primary question driving our research was "what is the current state of scholarly communication in Southern African universities?" To answer this, we utilised multiple research mechanisms to gather data – namely surveys, interviews, day-recalls, personal observations and informal conversations.

Because of the transformations taking place in the field of scholarly communication – due to changes in global research activity (Cooper 2009, 2011; Etzkowitz 2004; Gibbons 1997; Gibbons *et al.* 1994) and Web 2.0 technologies (Palmer 2005; Procter *et al.* 2010; Tenopir 2003; Thorin 2006; Weller 2011) – we felt it was important not only to establish baseline indicators for scholars' activities, but to examine their day-to-day practices.

We viewed the "practice turn" in the social sciences as offering us an approach that was compatible with our CHAT methodology in that practices can be seen as "arrays of human activity" that are materially mediated and "organised around shared practical understanding" (Schatzki 2001: 2, quoted in Palmer & Cragin 2008: 169).

We also built a "research and dissemination cycle approach" into our data collection instruments so that we could understand our research subjects' scholarly communication practices at each stage of the research and dissemination process. By breaking their activity down into discrete elements of a larger cycle, we believed we could identify how disciplinary norms, output genres, funding circumstances and personal values played

[18] All of our change lab workshops, seminars and formal meetings were digitally recorded and fully transcribed.

into their research and communication practices. It would also help us to identify possible contradictions in their activity systems, while pointing to potential opportunities for improvement. Furthermore, as Palmer (2005: 1140) states, "in the cycle of scholarly communication scholars play the role of both consumer and contributor of intellectual works within the stores of recorded knowledge." Hence we utilised Czerniewicz's (2013) research and dissemination cycle model because it incorporates an understanding of how open access and Web 2.0 technologies are transforming scholarly communication opportunities (which we discuss in Chapter 5).

In the context of that cycle, we also explored what enables or constrains the flow of scholarly communication by seeking to understand what difficulties scholars may experience with regard to access to and searching for scholarly work, as well as their dissemination choices.

This research strand therefore included quantitative and qualitative methods of data collection, aiming to produce "thick descriptions" of these practices in each of the study sites. We hoped to obtain "insider accounts" of African scholars' day-to-day practices as they went about producing, accessing and sharing research.

The first method that we used in this strand was a survey that was prepared with reference to the questions and findings from a number of international scholarly communication studies and surveys (Houghton, Steele & Henty 2004; Maron & Smith 2008; Palmer, Teffeau & Pirmann 2009; Procter *et al.* 2010; Rowlands, Nicholas & Huntingdon 2004; Rowlands & Nicholas 2006). In particular, we drew on Houghton, Steele and Henty's (2004) study, which focused on three key areas of research activity: communication and collaboration; information search and access; and dissemination and publication. We adapted these, however, to take account of our focus on the stages in the research cycle. The survey included the following categories of questions:

- General information
- Research and dissemination activity
- Collaboration and communication
- Information access and searching
- Forms of Web 2.0 engagement
- Faculty attitudes and support

At UNAM, the SCAP research assistant administered the survey to 50 academics in the Faculty of Humanities and Social Sciences. The data was coded and cleaned, entered and analysed within the PI team. The results are reported in Chapter 5.

The second research instrument we used was a semi-structured interview aimed at gaining a more granular feel for day-to-day research practices and what enabled or constrained them. The interviews covered:

- A discussion of their answers to the survey form
- Questions about the individuals' general background and history
- Narratives of three recent research projects or pieces of research that they had undertaken

At the same time, they sought to account for the social and organisational infrastructure within which research projects unfold, in particular the nodes in the activity system. In these narratives academics were encouraged to focus on the stages in the research cycle, such as:

- How the research started and what motivated it
- What it consisted of
- What enabled or constrained the production of outputs from the research
- What forms of interaction and networking were involved
- The uses of Web 2.0 technologies
- Dissemination choices (journal articles or other genres)
- Feedback on these outputs

The CVs of the interviewees were collected, analysed and viewed in relation to the scholarly shadows and footprints research undertaken as part of the third research strand.

The third research method we used in this strand was the "day-recall". This involved visiting a sample of the interviewees 24 hours after the first interview and asking them to narrate everything work-related they had done in those 24 hours, in order to elicit specific critical incidents that might shed light on what enabled or constrained research communication. In some cases this was repeated once more.

At UNAM we conducted seven interviews, each lasting about an hour-and-a-half. The interviewees were all academics who were seen to be active researchers and who had some understanding of open access issues and of the affordances of Web 2.0 platforms for scholarly communication.

Table 2.2 Total number of participants in SCAP's formal research processes

Interviewees/participants	UB	UCT	UoM	UNAM	Totals
Survey respondents	29	28	30	50	**137**
Change lab participants [1/2/3/4]	12/7/11/11	10/10/7/8	13/8/4/7	13/9/11/11	**152**
Values interviews (academics)	13	6	14	13	**46**
Values interviews (librarians)	5	4	5	3	**17**
Values interviews (managers)	5	5	5	5	**20**
RCP interviews (academics)	5	6	6	7	**24**
Totals	**98**	**84**	**92**	**122**	**396**

Values

The second strand of our research explored the values motivating university academics to conduct and communicate research. Drawing inspiration from a number of recent attitudes and behaviours studies focusing on academics in the global North (Archer 2008; Harley *et al.* 2007; Harley *et al.* 2010; JISC 2012; King *et al.* 2006; RIN 2009,

2010; Rowlands & Nicholas 2005), we sought to understand the foundational values driving research production in the Southern African context.

At UNAM, this entailed the PI team conducting focus group interviews with 13 academics, individual interviews with three librarians and individual interviews with five managers. This qualitative research was conducted during the course of the recurring site visits, with the focus group interview lasting about an hour-and-a-half and each in-depth individual interview lasting between 30 minutes and one hour. We recruited informants through convenience sampling (i.e. a process that is "convenient" for the researcher), typically relying on our research coordinator at the university to identify and contact the appropriate people for SCAP to engage.

For each category of university personnel interviewed, SCAP created a set of standardised questions (which were also asked at the other institutions), prompting respondents to reflect on their own and their institutions' research values. Through this, we were able to gather the data necessary for comparing scholars' values across the four universities we profiled. Below is the list of questions that interviewees were asked:

To academics (in focus groups)

- Why do you currently do research?
- Why would you want to do research?
- How much does our African context influence these motivations?
- Are there different motivations driving basic and applied research? Do you feel that these motivations change in a developing context?

To university librarians (individually)

- What role do you currently play in the scholarly communication process?
- What role would you like to play in that process?
- Does the African context influence the role you currently play, or would like to play, in this process?

To university managers (individually)

- Why do scholars at your institution conduct research?
- How does the African context impact their research motivations?
- What challenges do they face in fulfilling their motivations?

Through these questions, we sought to understand not only the values animating the production of local research, but how they were shaped by the African context and its various challenges and opportunities. The questions also formed the basis of sustained discussions concerning a variety of topics that organically arose through the respondents' reflections, such as university rewards and incentive structures, national development imperatives and consultancy work. This material generated data that was useful not only to our values research but to the other research strands as well.

In addition, we were able to obtain values-related information from our change laboratory workshops, surveys, day-recall sessions, interviews, implementation initiatives and personal observations gained through casual conversations and on-site

experiences. The fact that we were able to draw from multiple data sets, each with its own approach, was crucial for allowing us to get a comprehensive and complex view of scholarly values. The results of these values analyses are discussed in Chapter 5.

Impact

Academic research is one of the central concerns in a new, more accountable global academic environment. Traditionally conceptualised as peer-to-peer communication, the impact of a scholarly research object used to be tied solely to its importance in the academic community and not its importance in terms of socio-economic development. This has partly been a technological issue. Until recently the only quantitative measure of research impact was the Thomson Reuters ISI/WoS Impact Factor.[19] It was also due to an understanding of university practice as separate from the civil society and commercial world, and thus subject to a different set of rules. The professionalisation of the sector has brought with it interest from funders and governments about the demonstrable returns from investing in higher education (Power 1997; Raza 2009; Shore & Wright 1999; Strathern 2000).

Technological advancement in tracking tools now permits institutions to track a range of research object performance metrics, from traditional citation counts to downloads, bookmarks, page views and social media reports. Using these new methods, known as Altmetrics (alternative metrics), it is possible to obtain not just metrics and statistics, but to develop usage narratives that show how academic research is being used by civil society, making it possible to demonstrate the value of research to non-academic audiences and to track how it is being used. This information could help institutions to focus on refining their engagement with society, identify areas in which they are succeeding and determine where they could provide the most value to the community.

In order to experiment with Altmetrics in Africa, we initiated an output tracking exercise at our four study sites. Data was collected over a six-month period (May to October 2012) by research assistants at each site who were asked to acquire lists of publication outputs from their respective institutions. The data was examined to identify potential "impact narratives" as well as to identify any interesting or unusual characteristics.

This resulted in two policy briefs spearheaded by Cameron Neylon, a SCAP advisor:

Neylon C, Willmers M & King T (2014) *Illustrating Impact: Applying Altmetrics to Southern African Research*. Scholarly Communication in Africa Programme (SCAP) Brief No. 1 for the International Development Research Centre, January 2014, University of Cape Town. Available at: http://openuct.uct.ac.za/sites/default/files/media/SCAP_Brief_1_Neylon_et_al_Illustrating_Impact.pdf

Neylon C, Willmers M & King T (2014) *Impact Beyond Citation: An Introduction to Altmetrics*. Scholarly Communication in Africa Programme (SCAP) Brief No. 2 for the International Development Research Centre, January 2014, University of Cape Town. Available at: http://openuct.uct.ac.za/sites/default/files/media/SCAP_Brief_2_Neylon_et_al_Impact_Beyond_Citation.pdf

[19] Thomson Reuters, Journal Citation Reports, at: http://thomsonreuters.com/journal-citation-reports/

Cost-benefit

Our fourth research strand focused on the costs of scholarly communication in the African context, as well as the implications of moving to an open dissemination model. We saw this as a useful research effort because we wanted to be able to reduce a technologically and ethically complex proposal into a potentially simpler set of economic denominators that would allow institutions to judge the financial value of such a transition. We understood that for many institutions open access would only be of interest if it were cost-effective.

We explored a number of economic methodologies to help explicate the costs and benefits of African scholarly communication, namely Cost-Benefit Analysis, Cost-Effectiveness Analysis and Cost-Utility Analysis. The initially envisioned process was to uncover institutional financial data during the period October 2011–October 2012. However, the PI team, in consultation with the relevant RC, discovered that institutional financial reporting structures were insufficient for providing the granular detail required for any cost-utilising analysis. Moreover, data confidentiality concerns would have prevented it from being made available even if scholarly communication had been traceable through institutional reporting systems.

We therefore abandoned this line of research (because it was beyond the scope and capacity of the PI team and our partner universities) and instead focused on assessing the relationship between national development priorities, university mission commitments and open access strategies. This culminated in the production of an advocacy document lead by Alma Swan, a SCAP advisor, which showed how open access could support African institutions' desire to contribute to national development imperatives while preserving their intellectual patrimony through digital profiling and curation strategies:

Swan A, Willmers M & King T (2014) *Opening Access to Southern African Research: Recommendations for University Managers*. Scholarly Communication in Africa Programme (SCAP) Brief No. 4 for the International Development Research Centre, January 2014, University of Cape Town. Available at: http://openuct.uct.ac.za/sites/default/files/media/SCAP_Brief_4_Swan_et_al_Opening_Access.pdf

Implementation initiative

SCAP's research design called not only for the collection of data from our pilot sites, but for these sites' active stimulation through customised implementation initiatives (or "interventions") that sought to improve the state of scholarly communication within the sites. Five principle assumptions underpinned these initiatives. They would:

1. Be treated as experiments
2. Address a challenge articulated by project participants and institutional stakeholders
3. Be publishing-oriented, addressing content profiling and dissemination through new tools and technologies
4. Utilise open approaches (including open source software) wherever possible
5. Yield insights that could be extrapolated to the rest of the institution, developed in line with institutional strategy, e-infrastructure and international standards and protocols around interoperability

SCAP scoped and fulfilled the implementation initiatives during our four site visits to the institutions. The first visit aimed to surface the contradictions in the scholarly communication ecosystem, while the three subsequent visits sought to create consensus around the nature of the initiative, identify stakeholders and policy frameworks, and implement the agreed-upon pilot process.

While the formulation process was participatory, the PI team played a considerable role in interpreting and translating the desires of informants into a feasible intervention. This was due to two factors. First, while informants had a clear sense of institutional challenges, they were often unable to articulate desired solutions because they were unaware of the new technologies that might overcome these challenges. Second, the PI team also had the responsibility of protecting the funder's interests and ensuring that the implementation activity adhered to open access principles.

The Faculty of Humanities and Social Sciences (FHSS) served as the SCAP pilot site at UNAM. After identifying its scholarly communication challenges, needs and desires, our intervention focused on developing and implementing a quality assurance workflow process that would get FHSS materials from the scholars' hands into the institutional repository. The results of this process are detailed in Chapter 6.

Integration and analysis of data

Through these multiple research strands, implementation initiatives and other information-gathering instruments, we were able to obtain a substantial amount of data for answering our two key research questions. To analyse the data, we utilised the inductive "grounded theory" approach and the "constant comparative" method. The process generally went as follows (although this was not uniform across all data sets):

- Reduce inputs to text (i.e. transcribe change labs and interviews, tabulate surveys)
- Identify and extract assertions from texts (listed initially according to research strand and university).
- Tag assertions with an intuitive notation system that allows us to keep track of their speaker, context of production and university affiliation.
- Code assertions according to thematic categories (which are derived organically from the data).
- Analyse (in narrow focus) meaning of assertions in relation to each other within their thematic category, research strand and university context.
- Frame (in widening focus) implications of assertions from one theme with those of others, helping them make sense of each other, but still within a given strand and university.
- Integrate analytical insights from research strands on a particular university (including from secondary literature and personal observations) to gain a nuanced and comprehensive understanding of the institutional scholarly communication ecosystem.
- Compare integrated analyses from each university, revealing similarities among and differences between the universities' scholarly communication ecosystems, thereby yielding a clearer picture of regional communication practices.

In between these steps, we also stepped back and embarked on a more deductive process, which involved checking our data against key concepts and insights in the relevant secondary literature, as well as exploring "hunches" based on immersion in the sites and the data, which were then tested against the developing themes and frames. This analytical process was largely carried out by the PI team, but once key insights and preliminary findings had been established, they were shared with participants in the pilot sites – especially the RCs – so that they could interrogate, amend or verify them.

Conclusion

Our research methodology ultimately combined a number of approaches so that we could obtain data at our pilot sites from multiple angles. We realised early on that no single approach would yield us the detail that we desired from the institutions; thus, we took multiple, overlapping approaches to the sites so that we could understand them in a comprehensive way.

The first element defining our multifaceted research approach was the fact that we engaged with the pilot sites as "case studies": that is, each of them comprised one of four sites in our broader research effort. Researching these different sites using similar methods and obtaining comparable data meant that they were able to contribute to our comparative synthesis report which offers a view of scholarly communication for the entire Southern African region (Trotter *et al.* 2014). Yet we never forgot that each of these sites bore their own unique histories, traditions and practices; therefore we sought to gain nuanced understandings of each site so that, when we compared them, we were able to grasp precisely where their similarities and differences were located.

The second element of our approach was our use of the CHAT methodology as our primary analytical device. This influenced not only the metaphors that we utilised to assess these sites – thinking of them as activity systems (or ecosystems) – but also the style of engagement that we had with participants. We deployed an important CHAT data-gathering device, the change laboratory, which allowed us to work with university stakeholders to identify contradictions in their scholarly communication ecosystems. In this way, participants were not simply research subjects, but were co-partners in our quest to understand and change their reality. Their "buy-in" to this process was critical to the success of the project as they took a degree of ownership in it.

The third element of our approach was that we were able to obtain a quantitatively rich description of our pilot sites, primarily through the 25-page survey that we had participants fill out, but also through various change lab exercises that we deployed during our site visits. This formed a crucial "objective" layer of data that provided a foundation for cross-comparison between sites.

The fourth element of our approach was that we were also able to obtain a qualitatively rich understanding of these activity systems through our interviews, day-recall sessions, conversations and observations during our four rounds of site visits. We believed that this layer of ethnographically informed information was crucial for us being able to understand the complexity of these sites.

The final element of our research approach, which ended up yielding a number of our more subtle and durable insights, was our use of implementation initiatives to stimulate the pilot sites' activity systems. Through these, we experienced first-hand the bureaucratic, political, social and technical challenges involved in operating in those environments. By bringing money and resources into our engagement, we initiated a much more complicated set of relationships than if we had simply operated as a research programme. This often led to significant discomfort on both sides, but it helped to reveal the "actual", as opposed to the simply "discursive", commitments that both sides brought to the relationship.

Chapter 3.
The University of Namibia context

In this section, we will analyse the broader contexts shaping activity at the University of Namibia. First, we will discuss the higher education context in sub-Saharan Africa so as to appreciate how the broader continental environment impacts UNAM. Second, we will explore how the Southern African context reflects, and inflects, broader continental conditions with regards to higher education. Third, we will hone in on the Namibian national setting to understand the most immediate political context shaping UNAM. And lastly, we will assess UNAM's institutional context, which will give us greater insight into the faculty and departmental discussions later. This four-tier nested approach – analysing the continental, regional, national and institutional settings – will allow us to locate more precisely which contexts shape the different elements of our pilot site's activity system. In each section, we will focus on the context's history, demographics, funding, human capital, infrastructure, research and management, giving us a detailed impression of each. 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 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.

The African higher education context

One of the key challenges to understanding higher education in Africa is finding reliable, up-to-date statistics and information that render the continent legible for analysis. As Tijssen (2007: 304) states, even getting hold of standard data sets is "often problematic, mainly because official national statistics on magnitude and distributions of resources and research personnel are often missing, outdated, or the existing statistics fail to meet international quality standards and statistical manuals." This means that the image we paint of the higher education sector in Africa will be, to a certain extent, impressionistic rather than definitive. But the data that is available does provide a clear picture of certain challenges facing this field.

History

Higher education in sub-Saharan Africa is "mainly a post-colonial development" (Mamdani 2011a),[20] though a number of "colleges, university colleges and/or fully developed universities existed before independence in countries such as Sierra Leone, Ghana, Nigeria, Ethiopia, Uganda, Senegal, Rhodesia and Nyasaland … and South Africa" (Mouton 2010: 2). Many of these were established in the final years of the colonial period after World War II and were shaped as "an artifact of colonial policies" (Teferra & Altbach 2004: 2). These institutions trained up small numbers of students to serve in the lower orders of the colonial administration, emphasising subjects that were seen as appropriate to administrative work, especially in the humanities and social sciences.

With the majority of African states gaining independence in the 1960s, the new national governments took a strong interest in higher education institutions (HEIs) as agents of social change and development, leading to the conceptualisation of the "developmental university" (Ajayi, Goma & Johnson 1996). The extent of governments' interest was such that, according to Zeleza (2002: 10), "more schools and universities were established in the first 25 years after colonialism than in a century of imperial rule."

The key question at the time was: how do young universities contribute to "development" in a nascent independent context? Mkandawire (2011: 15) argues that "African governments tended to view universities as intended for the production of 'manpower' necessary to indigenise the civil service. And if they thought about research at all, they wanted research that was relevant to 'development and nation building'." Yet even with this seemingly narrow focus on producing graduates for the civil service (which in many respects reproduced the prior mission of the colonial powers to train up administrative functionaries), the calibre of the scholars that these institutions delivered was quite high. According to Sawyerr (2004: 226), "the 'first generation,' educated mostly in the 1960s and earlier, were generally trained to the highest international standards at public expense, both at home and abroad, and had embarked on academic careers under conditions that respected and provided adequate means for the cultivation of knowledge."

The rapid growth in tertiary education during this early honeymoon period, buoyed by government spending and a strong market for African raw materials, was later stifled by the economic crises of the 1970s that changed how governments and international funding agencies viewed universities on the continent (Mkandawire & Soludo 1998). The problem for many governments was that they "had no coherent development model", so government "steering" of the university turned into outright political "interference and universities became sites of contestation. States and academics became sceptical of the role of universities in development, and higher education came to be seen as a 'luxury ancillary' – nice to have, but not necessary" (Cloete, Bailey & Maassen 2011: xv). Sawyerr (2004: 226–227) argues that the African scholars who graduated during this period became part of a broader "brain-drain" to the West: "The 'second generation' came of age in the 1970s and early 1980s, when it was still common to supplement local degree work

[20] Mamdani (2011a) suggests that the reason why higher education was not developed more robustly during the colonial period was because, "Lord Lugard, Britain's leading colonial administrator in Africa, used to say that Britain must avoid the 'Indian disease' in Africa–that is, the development of an educated middle class, a group most likely to carry the virus of nationalism."

with graduate study abroad. But so harsh were economic conditions at home that almost anybody who could remain abroad after graduating did so."

As a long period of economic stagnation set in, African governments turned increasingly to the World Bank and the International Monetary Fund (IMF) for assistance and loans. These bodies began to impose serious conditionalities on those African states seeking debt relief, making them abide by Structural Adjustment Programmes that significantly reduced government spending.

In response, African governments made substantial cutbacks in tertiary education budgets (Harle 2010), which the World Bank saw as providing less cost-effective benefit than primary and secondary education (Bloom, Canning & Chan 2005). According to Cloete, Bailey and Maassen (2011: xv):

> *spending per student fell from USD6,800 in 1980, to USD1,200 in 2002, and later to just USD981 in 33 low-income sub-Saharan African countries. Lack of investment in higher education delinked universities from development, led to development policies that had negative consequences for African nations, and caused the closure of institutions and areas of higher education that are critical to development.*

This pervasive reduction of funding, resources and opportunities characterised almost two decades of higher education in Africa. Sawyerr (2004: 226–227), describing the generational cohort emerging from this period, states that:

> *by the mid-1980s, access to opportunities for study abroad, especially in Europe, had so diminished that most had to undertake their entire education, from first degree to doctoral studies, at home. This occurred at a time when the range and currency of library holdings, as well as the quality of teaching and research at most African universities, were in decline. It is this "third generation," currently staffing our universities, that has borne the brunt of these severe declines.*

African economies have largely recovered since that period, but the revival in the higher education sector has been challenged by rapid demographic growth within each country, especially by the number of secondary school-leavers who demand access to higher education (Teferra & Altbach 2004). But African governments, universities and international funding agencies have learned from the policies of the recent past, pledging to make higher education and research a greater priority moving forward.[21]

[21] According to Cloete, Bailey and Maassen (2011: xv–xvi), "During the 1990s and early 2000s some influential voices (including the World Bank) started calling for the revitalisation of African universities and for linking higher education to development. Ahead of the UNESCO World Conference on Higher Education in 2009, a group of African education ministers called for improved financing of universities and a support fund to strengthen training and research in key areas."

Demographics

Sub-Saharan Africa's population of 874 million is serviced by over 500 universities.[22] However, this is a relatively small number of universities to handle such a large population. According to UNESCO (2012: 2), "with its average gross enrolment ratio (GER) in tertiary education of just 6% … sub-Saharan Africa lags behind the rest of the world where ratios range between 13% in South West Asia and 72% in North America and Western Europe, though the ratios for most developing regions are between 20% and 40%." Moreover, due to the previous focus on primary and secondary education – combined with a rapidly growing continental population – massive numbers of school-leavers are seeking entry into higher education. In response, governments have placed significant pressure on universities to increase enrolment rates (Harle 2010) and to retain a greater portion of students in postgraduate education, such that these have become key figures for institutional and national-level reporting. With an annual growth rate of 8.4%, nearly twice the global average of 4.3%, the growth rate since 1970 has seen a 20-fold increase in the number of students enrolled (UIS 2010).

There are currently about 3 million students attending African HEIs. Unlike in the rest of the world, where females tend to enrol at a higher rate in tertiary studies than males, male enrolments in African HEIs remain slightly greater than female. The ratio between male and female students is about 1:0.68 (UIS 2010: 3). But this is changing as more females enter the sector each year.

The majority of students in sub-Saharan Africa attend public institutions, but a substantial number are now enrolled in private higher education institutions (PHEIs). According to Varghese (2009: 3), "private higher education is one of the fast expanding segments of higher education in Africa. In 2009, there were around 200 public and 468 PHEIs in Africa", although most of these institutions are small in size and in total account for less than one-third of total enrolments. The majority (53%) of these institutions are based in French-speaking areas of the continent (Varghese 2009), provide business-related courses and are located in urban areas. There is also a substantial number of faith-based PHEIs – the highest-growing component of PHEIs in the last decade (Karram 2011) – run on a non-profit basis and supported by international denominational bodies that provide higher education with a religious focus. These tend to be less market-driven than other PHEIs and offer liberal arts and humanities courses from a Christian or Islamic perspective.

Funding

The economic situation in many African countries makes it difficult for governments to provide increased funding for higher education (Teferra & Altbach 2004), even as student enrolments soar. Spending as a percentage of gross domestic product (GDP) ranges from 0.1% (Lesotho) to 0.9% (South Africa), averaging around 0.7%, though rarely coming close to the 1.3% that characterises the expenditure of high-income nations (OECD 2012). This means that with this level of spending, sub-Saharan African countries can only provide tertiary education to a tiny fraction of their citizens compared to

[22] For a list of all African HEIs (including North Africa), see: www.webometrics.info/en/Ranking_africa

developed nations (5% vs over 60%). In terms of total education expenditure, the legacy of underfunding for the higher education sector persists – most countries spend between 10% and 20% of their total education budgets on tertiary education, still focusing on primary and secondary education.

The lack of higher education funding has predictable consequences. Many African institutions lack adequate facilities, particularly laboratories and scientific equipment (Urama *et al.* 2010). Library subscriptions do not always cover the full range of publications desired by their academics. Scholars are often unable to pursue a broad range of research topics, especially those requiring international travel.

Tight funding can also result in relatively low salaries for the staff, which often encourages them to seek external sources of financial support, such as through private tutoring, after-hours instruction (at other private colleges) or consultancy research. For instance, consultancies offer resources that financially strapped institutions may not be able to provide and offer attractive stipends for work that is primarily quantitative and answer-orientated in nature (King 2006). Sometimes these consultancies contribute to national development (Sawyerr 2004), but according to Mamdani (2011b: 1), they can also divert from the construction of a long-term, sustainable research culture towards a market-driven, short-term and externally controlled research environment, where academics are reduced to "native informers". The level of external, private and international research funding may end up undermining African institutions' ability to set their own research agendas and nourish deep theoretical and intellectual research development. Despite this, most African universities want their academics to engage in consultancy work because it brings revenue into the institution.

The relatively low levels of higher education expenditure are mirrored by the low levels of research and development (R&D) expenditure across the continent. According to the African Science, Technology and Innovation Indicators Initiative (ASTII 2010: 8–9):

> *R&D activities in Africa are to a large extent financed by international donors and other foreign sources. Among the countries surveyed, Mozambique is currently the most dependent on foreign donors, in that more than 50% of its R&D is financed from abroad, followed by Mali (49.0%), Tanzania (38.4%), Senegal (38.3%) and Malawi (33.1%). By contrast, Nigeria and Zambia show very low dependence on foreign funding. In countries such as Ghana, South Africa and Malawi, the business enterprise sector accounts on average for 40% of R&D funding, while in most other countries its share of funding is less than 10%.*

Human capital

In conjunction with these financial challenges, most countries face both a relative and absolute lack of skilled professionals to drive development internally. They are able to staff their governmental and civil service bureaus, as was intended by the creation of the higher education system, but the best and the brightest often migrate abroad, seeking greater incomes, opportunities or political stability. This is the well-known "brain drain" phenomenon. The consequences of the export of African labour are not universally

negative (UNESCO 2012), but with up to 30% of African scientists lost due to out-migration (Crush & Pendleton 2012; Mouton *et al.* 2008; Te Velde 2005), African countries are forced to rely to a great extent on international "experts" for pursuing their development goals. It has also meant that many African institutions suffer from endemic staff shortages, as Tettey (2009: 13) relates:

> *Academic staff shortage has become a huge challenge for African universities, and no respite seems to be in sight. In fact, observers of the higher education scene on the continent unanimously identify this issue as one of the most critical challenges to the mission of these institutions. They contend that, if urgent concerted action is not undertaken soon enough to address the problem, the African academy will not only lose its ability to produce the requisite number of personnel to support the countries' human resource needs, but the quality of intellectual life will continue to erode.*

This is reinforced by low levels of postgraduate enrolment at African universities, a fact that threatens to prolong the continent's skills shortage indefinitely.

Infrastructure

The provision of various types of infrastructure across Africa – roads, buildings, electricity connections – is patchy, though universities tend to be located in better-resourced urban areas where certain basic standards are usually met. The key infrastructural challenge in the higher education sector is access to broadband internet.[23]

Compared to the developed world, internet access in Africa is frequently more expensive and at a lower bandwidth (Fuchs & Horak 2008; Harle 2010; Oyelaran-Oyeyinka & Nyaki Adeya 2004). Moreover, Africa's internet penetration percentage of 15.6% is less than half of the global average of 34.3%.[24]

However, the provision of broadband internet has improved significantly in recent years, particularly as a result of two new undersea fibre-optic cables[25] that were laid along the east coast of Africa in 2009. The establishment of national research and education networks – fibre-optic backbones dedicated to the academic and research sector – in many African countries has also served to extend internet provision and boost much-needed computation capacity for research. The UbuntuNet Alliance, established in 2006 as a central coordinating network for these network structures, has played a significant role in supporting the development of terrestrial broadband and interconnectivity

[23] Former UN secretary general Kofi Annan believes that ICTs have become such a core infrastructural component for full engagement with contemporary economies that "being cut off from basic telecommunications services is a hardship almost as acute as deprivation of jobs, food, shelter, health care, and drinkable water." Annan K (1999) Speech at the ITU Telecom Opening Ceremony. 9 October 1999. Available at: www.itu.int/itunews/issue/1999/09/telec99.html

[24] Internet World Statistics (2013) Internet Usage Statistics for Africa. Available at: www.internetworldstats.com/stats1.htm [accessed 26 February 2013]

[25] The SEACOM cable connects Djibouti, Kenya, Tanzania, Mozambique and South Africa to Europe and India while the TEAMs cable connects Kenya to the United Arab Emirates. These operate at a bandwidth capacity of 1,280 gigabits, dramatically increasing internet speeds as users connect to content that is typically hosted in Europe or North America.

between these national networks and with international networks outside the continent (Harle 2010).

Nonetheless, there is "a digital divide, not only between rich and poor countries, but also within nations" (InfoDev 2008: 23). Thus, within Africa, internet penetration can be as low as 1.1%, as it is in Ethiopia, or as high as 35% in Mauritius.[26] Within countries, urban populations often enjoy reasonable internet access with the widespread presence of internet cafes while rural access is far less common (Nyambura-Mwaura & Akam 2013).[27]

In academia, African universities have greatly improved their internet connectivity, albeit from a low base (Echezona & Ugwuanyi 2010), but they remain generally slower than universities abroad (Barry *et al.* 2008). The historically low levels of ICT provision have hampered the development of skilled ICT professionals at African universities, especially in libraries which should be at the forefront of the digital revolution (Mutula 2008). Students often have to deal with limited computing resources, broadband access and internet-use training, compounded by a lack of familiarisation with computers during primary and secondary schooling.

This low provision of bandwidth has limited scholars' engagement with online platforms that would enhance their academic profiles, broaden their research networks and open up new collaborative opportunities with scholars elsewhere.

Research

As discussed in Chapter 1, research production in sub-Saharan Africa has been growing over the last decade (at least with regard to ISI/WoS-rated journal articles), but it has been declining as a proportion of global outputs. This means that African research production is improving in absolute terms, but becoming less competitive in comparative terms. The positive increase is due to African governments' reinvestment in higher education as a site for development-enhancing activity. Moreover, many African universities have moved beyond their traditional teaching-oriented mandates to include research missions that encourage local scholars to produce more published outputs. They have also strengthened the size and profiles of their graduate programmes so as to build greater research capacity internally. This is a slow and uneven process, but these changing institutional norms are impacting every university on the continent.

In the sub-Saharan region, South Africa and Nigeria dominate WoS-listed research production (Adams, King & Hook 2010) while Tanzania is the most prolific producer in East Africa. Nevertheless, this research output is extremely low compared to that of the developed world; in 2008, the Netherlands alone produced approximately 27,000 ISI-ranked papers, nearly 50% more than the sub-Saharan total (Adams, King & Hook 2010).

Moreover, as Harle (2010) points out, substantial investment in journal access and associated areas of training and capacity-building has also raised Africa's research

[26] International Telecommunication Union (ITU) ICT Facts and Figures 2013, available at: www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx
[27] For Africa bandwidth maps, see: www.africabandwidthmaps.com/

potential. Through donor-supported and collaborative initiatives, academics in many universities now have free or subsidised access to current and back issues archives. The Programme for the Enhancement of Research Information (PERii) has negotiated access to over 18,000 full-text journals (a further 7,000 are abstract only), while the Health InterNetwork Access to Research Initiative (HINARI) offers over 6,400; the Access to Global Online Research in Agriculture (AGORA) offers 1,278 and Online Access to Research in the Environment (OARE) offers over 2,990. While it is difficult to calculate the total number of free or discounted titles available to some African institutions, Harle (2010: 5) confirms that the total figure is certainly substantial, stating that "Kenyan libraries, which before the advent of affordable e-resources had collections averaging 3,000 print journals, now have an average of 35,000 titles via online access. Moreover, they have made average savings of 80% in their budget, while receiving over tenfold the number of titles."

Management

Historically, the strong interest taken by post-colonial African governments in tertiary education has led to a close (and sometimes contentious) working relationship between universities and their governments. This has often been due to competing notions of what role the university should play in society. While both parties have typically believed that the university should serve national development at some level, they have often disagreed about what constitutes "development" and the best means to achieve it. According to Lindow (2011: 89):

> *Universities strive to be partners to government in the name of development, but their relationship to the state is in fact complicated. If universities are indeed bound up in a pact with government and society, they must also shine a light of critical inquiry on the relationship between the two—a role which sometimes puts academics at odds with authorities, in Africa and elsewhere around the world.*

However, in many African countries where civil society remains generally weak and the local universities lack meaningful autonomy, higher education institutions often resemble branches of the civil service (training up workers and loyally supporting the government) rather than sites of independent and critical thought (an ideal that many scholars hold). Zeleza (2002: 16) critiques this situation, explaining that:

> *Governance structures often mirror those of the state, partly because, in many cases, senior university administrators are state appointees, who in turn appoint unit heads down the administrative hierarchy. The decision-making process tends to be discretionary and authoritarian, which is manifested through recruitment, screening, promotions, allocations of work loads, provision of leave and sabbaticals, scaling of staff, gate-keeping, policing and closures of campuses, surveillance, sexual harassment, and the administration of welfare facilities. Research is often enmeshed in patron–client networks, and it is employed as a weapon for punishing radicals, rewarding sycophants, and settling scores. Faculty is also sometimes*

> *humiliated and harassed through the use of accounting procedures. In short, authoritarianism, corruption and discrimination on ideological, intellectual, national, ethnic, religious and gender bases are quite widespread in institutions dominated by the academics themselves. This breeds censorship and encourages the "brain drain" of those, usually younger scholars, able to find greener pastures elsewhere, locally or abroad.*

The Task Force on Higher Education and Society (2000: 62) reinforces this picture of state-controlled institutions, stating that "with the government in many countries having assumed the power to appoint and dismiss the Vice Chancellor, governance in the universities has thus become a purely state-controlled system .... There are countries where even deans and department heads are also appointed by government and where heads of institutions change with heads of government."

That said, the structure and practices of university management do not derive from the example of national governments alone, but through the institution's constant comparison with and reference to international norms. The standards set by other universities have a powerful effect on how research agendas are set, how administrators evaluate academics and how they go about improving research productivity.

Conclusion

It is tempting to interpret this history negatively, as a period of lost opportunities and strategic mistakes. Indeed, we could provide significant evidence to support such a conclusion. As Zeleza (2002: 10) reminds us, "today, Africa remains the least educated continent in the world, able to provide higher education to only 3.5% of the college-age population, as compared with 60% in the industrialised countries."

Even more troubling, some scholars believe that education in Africa has irrevocably damaged Africans' psyches and "souls", a process started by the colonisers and continued by the inheritors of independent state power. According to Nyamnjoh (2012: 129–130):

> *In Africa, the colonial conquest of Africans – body, mind and soul – has led to real or attempted epistemicide – the decimation or near complete killing and replacement of endogenous epistemologies with the epistemological paradigm of the conqueror. The result has been education through schools and other formal institutions of learning in Africa largely as a process of making infinite concessions to the outside – mainly the western world. Such education has tended to emphasise mimicry over creativity, and the idea that little worth learning about, even by Africans, can come from Africa. It champions static dichotomies and boundedness of cultural worlds and knowledge systems.*

Nevertheless, it is worth remembering that, despite the ups and downs of this history, Africa has progressed significantly since independence, especially in terms of literacy:

> *Since 1960, the putative year of African independence, only 9% of the African population was literate, rising to about 50% three decades later. Taking the*

> *sub-Saharan region alone … enrolment ratios rose from 45% in 1965 to 74% in 1995 for primary schools and 5% to 35% for secondary schools. The rapid expansion of education not only led to a massive improvement in the African human capital stock, it also laid the institutional basis for the social production of African intellectual capacities, communities and commitments*. (Zeleza 2002: 10)

Africa's prospects have also drastically improved according to numerous other indicators:

- In 1960, there were only about a dozen HEIs that black Africans could attend, but in 2013 there were over 500.
- There has been a 20-fold increase in higher education enrolment since 1970 (Chien & Chiteng 2011: 6).
- While higher education was almost completely male-dominated at the end of colonialism, today the region enjoys substantial levels of female participation.

Education in sub-Saharan Africa is recovering from a long period of neglect and, along with many other institutions in the region, is experiencing considerable difficulties. However, the region is also taking important steps to improve the situation. One of the more impressive areas in this regard is Southern Africa, where conditions are such that they challenge any casual understanding of the "African context" and provide a greater appreciation for the diversity of circumstances on the continent.

The Southern African context

While within the geographical boundaries of sub-Saharan Africa, Southern Africa (here defined as the countries within the Southern African Development Community, or SADC) conforms to some of the above issues while deviating in others. Home to 14 countries[28] 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.

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[29]) and the four most unequal countries in the world (Namibia, South Africa, Botswana and Lesotho[30]).

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[28] SADC member states: Angola, Botswana, the Democratic Republic of the Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe.
[29] Global Innovation Index 2013, available at: www.globalinnovationindex.org/content.aspx?page=data-analysis
[30] 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

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 the crisis in sub-Saharan African higher education due to the presence of national funding capacity, a fact that has contributed to South Africa's regional dominance in research production.

Demographics

Southern Africa's tertiary 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 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. 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 approximately 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 & 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" (Mosha 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.

Conclusion

As this brief description of the Southern African context makes clear, the region shares many of the features of the continental higher education picture, yet diverges from it in significant ways as well. This is mainly due to the presence of South Africa, an outlier that skews the numbers and generates substantially more capacity and opportunity for the region compared to what the continental figures would suggest. However, the small population sizes and high levels of political stability in the other countries SCAP profiled (Botswana, Mauritius and Namibia) have also made the region a more robust and productive educational environment, comparatively speaking. With this in mind, we can now turn to the national context shaping this particular partner university.

The Namibian national context

Complicating this nested contextual picture further, Namibia itself has quite 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.[31] But after three decades of colonial 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 the University of Namibia (UNAM).

[31] 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

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.

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%,[32] 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.

Table 3.1 Namibian indicators

Population	2.1 million (2011)[33]
Size	824,268 km²
Public universities	2 (UNAM and the Polytechnic)
Human Development Index	0.608
Gini coefficient	63.9
Gross national income per capita	USD6,520
Gross enrolment ratio (tertiary education)	10.5%

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*

[32] Namibia Statistics Agency (2013) *The Namibia Labour Force Survey 2012 Report*, available at: www.nsa.org.na/files/downloads/12c_The%20Namibia%20Labour%20Force%20Survey%202012%20Report.pdf
[33] Government of Namibia, Census Projected Population (2011), available at: www.gov.na/population

SADC region). In the previous SARUA study, 11% (73 out of 660) of the staff members were from outside Namibia, so there appears to have been a decline in international staff members within the Namibian system.

Funding

Of the national budget, 22% went to education in 2010, of which 17% 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% of the total education budget 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%.[34]

Human capital

Namibia's tertiary education sector currently has a gross enrolment ratio of 10.5%,[35] which is greater than the African average of about 6%, but lower than that of Botswana (16.4%), South Africa (18%) and Mauritius (45%).[36]

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, 4 PhDs and 14 post-docs (SARUA 2012: 3).

Infrastructure

Namibia has an internet penetration rate of 12%,[37] mobile telephony coverage of just over 100 mobiles per 100 population, but a low number of fixed lines, less than 10 per 100 population.[38] Internet access is strongly located in the urban areas.

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, 7 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:

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[34] 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
[35] Ibid.
[36] 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
[37] Internet World Stats, Internet Usage Statistics for Africa, available at: www.internetworldstats.com/stats1.htm [accessed 4 December 2013]
[38] IST Africa, Overview of ICT infrastructure in Namibia, available at: www.ist-africa.org/home/default.asp?page=doc-by-id&docid=3581 [accessed 4 December 2013]

> *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 was less robust, with Kenya leading with four papers (Nkwelo 2012: 142).

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 gradual 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.

The University of Namibia context

UNAM is the only full-fledged university in the country, though its role is 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

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."[39]

The university maintains close relationships with the national government. This relationship is based on a strong historical precedent – in 1986, the United Nations Institute for Namibia (UNIN), a United Nations Council body established to facilitate Namibia's transition to democratic self-governance, developed educational policy based on an extensive assessment of socio-economic conditions. The following quote from the Institute's resulting document explains the proposed role for higher education:

> *University education in an independent Namibia should be a logical extension of the liberation struggle of the people of Namibia. It should mark the beginning of the second phase of the liberation struggle leading to full social and economic independence. The university must be in the vanguard of those institutions involved in the economic, social and cultural development of the nation. It should be viewed as an instrument of social and economic change and should reflect the needs and aspirations of Namibians.*
> (UNIN 1986: 531)

This sentiment 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).

Demographics

With a student population of close to 13,000, academic programmes at UNAM emanate from eight faculties and two schools (listed in Table 3.2). 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

The university allocates a budget of approximately N$ 1 million (USD101,010) every year to the Research and Publications Office (RPO)[40] 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*

[39] UNAM History, available at: www.unam.na/about_unam/history.html
[40] UNAM Research, available at: www.unam.na/research/preface.html

purposes. Collaborative research is encouraged, hence priority for funding will be given to proposals that fulfill this requirement.[41]

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%

Table 3.2 University of Namibia indicators

Faculties	Agriculture & Natural Resources Economics & Management Science Education Engineering & Information Technology Health Sciences (including schools of Medicine and Nursing & Public Health) Humanities & Social Sciences Law Science
Academic staff numbers	718 (permanent)
Academic:Administrative staff ratio	1:0.87 (625 administrative staff)
Enrolment	17,536
Student:staff ratio	40:1
Female:Male student ratio	58:42[42]
Total research income	N$4 million
Library volumes	214,237
Print journals Electronic journal subscriptions Full-text databases	175 116 21
International rankings: Times Higher Education (THE) Quacquarelli Symonds Shanghai Jiao Tong University Webometrics	 -- -- -- 3,514 (54th in Africa)

[41] RPO research guidelines, available at: www.unam.na/research/guidelines.html
[42] UN Country Profile on Namibia, available at: http://data.un.org/CountryProfile.aspx?crName=Namibia

Human capital

Of the 718 permanent academic staff members at UNAM, 122 hold PhDs, 36 are full professors and 288 of the lecturers hold masters degrees.[43]

Infrastructure

A wireless network was established at the university's main campus in February 2012;[44] 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.[45]

Research

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 FHSS, 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, as seen in Table 3.3.

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.

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[43] About UNAM, available at: www.unam.na/about_unam/about_unam_index.html
[44] 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/
[45] UNAM Digital Collections, available at: http://digital.unam.na/

Table 3.3 UNAM research targets (UNAM 2011d: 15)

Objective	Measure	Targets						Initiatives	Cost
		Base-line	YR1 2011	YR2 2012	YR3 2013	YR4 2014	YR5 2015		
Increase research output	Number of refereed publications	90	110	130	140	150	160	Establish baseline data	0
								Training and mentorship	N$85,000
								Establish UNAM Press	N$1,600,000
								Strengthen UNAM Press	N$500,000
								Encourage research mentorship	N$6,000,000
								Increase opportunities for proposal and grant writing	N$400,000
								Improve research culture	N$610,500
	Number of other publications	305	320	340	360	380	400	Develop responsive reward system for research and publication	N$122,102
								Expand research activities and research collaborations	N$14,420,400
								Develop relevant research policies	0
									N$23,738,000

Management

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 Research and Publications Office (RPO), which regulates, promotes and encourages research and publication among the academic community within the university, offering workshops,[46] institutional reviews, policy support, research proposal development, intellectual property guidance and quality assurance assistance.[47]

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."[48] Additionally, the UCCB also serves to:

> *attract, increase, facilitate, support and coordinate all consultancy activities that are solicited; to facilitate, support and coordinate joint rendering of consultancy services initiatives of the University's faculty, departments or staff members of any centre; and that all projects are distributed in a fair and transparent and cost effective manner to the university's faculties, departments and centres so as to provide opportunities for staff members to engage in rendering consultancy services in accordance with the University.*[49]

[46] RPO research training, available at: http://www.unam.na/research/training.html
[47] UNAM Research, publications, papers, journals, abstracts: Preface, available at: www.unam.na/research/preface.html
[48] UCCB, available at: www.unam.na/centres/uccb/uccb_index.html
[49] UCCB, available at: www.unam.na/centres/uccb/uccb_index.html

These two primary entities are also bolstered by the work of the Multi-disciplinary Research Centre (MRC), which conducts research in the physical and social sciences.[50]

Table 3.4 UNAM's current and desired states of various service dimensions (UNAM 2011d: 6–7)

SERVICE DIMENSIONS	CURRENT STATE	DESIRED STATE
Academic programmes and relevance	Satisfactory	Responsive academic programmes
Registration process	Below average	Efficient and fast registration process
Student and learning environment	Not satisfactory	Best practice
Community service and engagement	Lack of focus and relevance	Relevant community service programs
Knowledge creation and publication	Weak	Best practice
Extension services	Good	Excellent
International liaison and collaboration	Below average	Above average
Access and equity	Average	Above average
Teaching and learning	Average	Above average
Research and consultancy	Low output	High output
Library services	Average	Excellent library services
ICT infrastructure	Average	Best practice
Image	Average	Leading institution
Asset management	Weak	Optimal
Financial management	Tactical	Strategic
Corporate governance	Average	Excellent
Revenue base	Limited	Wide
Resource mobilisation and management	Below average	Optimal
Performance management	Limited	Fully functional
Organisational culture	Weak	Ownership
Professional services	Average	Institution of choice
Physical facilities	Average	World class
Examinations	Average	Excellent
Quality assurance	Below average	Best practice
Maintenance of physical facilities	Ad hoc	Responsive maintenance system
Human capital management	Average	Best practice
Customer care	Average	World class
Records management	Average	Excellent

Conclusion

As a young university inspired by a mission to contribute, develop and nurture both young minds and the nation, UNAM is a responsive institution in that it remains open to

[50] UNAM Research, available at: www.unam.na/research/preface.html

new ideas, processes and strategies. As part of that, it tries to remain aware of its strengths and weaknesses with an eye for improving itself going forward. In its latest Strategic Plan, the university assesses its current performance in a number of service dimensions, finding that there is room for improvement in many of them. The results of its self-assessment listed in Table 3.4 offer an unvarnished understanding of the institution through its own eyes.

Chapter 4. Scholarly communication policy landscape at UNAM

In this chapter, we will provide a snapshot of the policy landscape shaping UNAM research and communication activities. We will do so by viewing this landscape from three different vantage points: the international context, the national context and the institutional context. Through this nested approach, we will get a clearer idea of how the university's scholarly communication activities respond to their surrounding policy environment. Through a thick description of this landscape, we will be able to offer some light analysis concerning institutional scholarly communication, though this chapter mainly serves to set the stage for a more comprehensive analysis of the relationship between scholarly communication practices and the policy environment in later chapters.

The international context

The scholarly communication policy environment in Southern Africa remains highly influenced by academic norms established in the global North. This is not only due to the historical foundations of the universities themselves – derived from British models in the cases we studied – but the nearly hegemonic position that European and North American universities enjoy in setting global academic standards. This helps to explain why, even though Northern and Southern universities are often animated by different values and missions, their scholarly communication methods are largely the same, even if those divergent missions might be better served by different communication strategies.

The scholarly communication norm up until recently has been characterised by three prevailing features. In this "traditional" model, scholarly communication is:

- Disseminated primarily through journal articles, books and book chapters, thus equating to scholar-to-scholar communication
- Published by third-party commercial publishers that charge subscription fees (for institutions) or purchase costs (for individuals) to access their publications
- Often assessed according to a work's Impact Factor, the metric purporting to

measure a work's prestige and "importance" based on the average citation rate the publishing journal's articles collectively achieved during a two-year period

However, these normative standards are in a massive state of flux as the open access (OA) and alternative metrics movements challenge the utility of the traditional scholarly communication model and the arithmetic sensibility of the Impact Factor. These challenges emanate largely from within the institutions of the global North, but they also shape Southern scholarly communication opportunities, offering new possibilities for greater visibility and social "impact".

Open access goes mainstream

Over the last five years, global scholarly communication discourse has changed dramatically, moving from a discretionary consideration in academic research activity to an integral component of that process. In many ways, this is due to the achievements of the open access movement, which gained the scholarly, institutional and governmental support necessary to move from the activist fringe to the mainstream. This transition was signalled by the raft of policies adopted by major research-funding bodies, which required that all research funded by them was made open access, such as:

- European Commission[51]
- European Organization for Nuclear Research (CERN)[52]
- European Research Council (ERC)[53]
- Max Planck Society[54]
- Research Council UK (RCUK)[55]
- UK government[56]
- UK Department of Health (NHS/NIHR)[57]
- UNESCO[58]
- US government agencies[59]
- US National Institutes of Health (NIH)[60]
- World Bank[61]

[51] European Commission MEMO/12/565 (17/07/2012) Open access to scientific data – Communication and Recommendation – background, available at: http://europa.eu/rapid/press-release_MEMO-12-565_en.htm?locale=en
[52] CERN Scientific Information Service, Supporting Open Access Publishing, available at: https://oldlibrary.web.cern.ch/oldlibrary/OpenAccess/PublicationPolicy.html
[53] Open Access Guidelines for researchers funded by the ERC, available at: http://erc.europa.eu/sites/default/files/document/file/open_access_policy_researchers_funded_ERC.pdf
[54] Open Access and the Max Planck Society, available at: http://edoc.mpg.de/doc/help/mpg_oa.epl
[55] RCUK Policy on Open Access, available at: www.rcuk.ac.uk/research/outputs/
[56] Finch J (2012) *Accessibility, Sustainability, Excellence: How to Expand Access to Research Publications*. Report of the Working Group on Expanding Access to Published Research Findings: The Finch Group. Available at: www.researchinfonet.org/wp-content/uploads/2012/06/Finch-Group-report-FINAL-VERSION.pdf
[57] Statement on DH/NIHR-funded research and UK PubMed Central, available at: www.nihr.ac.uk/files/pdfs/OpenAccessPolicyStatement.pdf
[58] Swan A (2012) *Policy Guidelines for the Development and Promotion of Open Access*. Paris: UNESCO. Available at: http://unesdoc.unesco.org/images/0021/002158/215863e.pdf
[59] John Holdren (22 February 2013) Memorandum for the Heads of Executive Departments and Agencies, available at: www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf
[60] NIH Public Access Policy Details: http://publicaccess.nih.gov/policy.htm

With these major funders[62] requiring that their research outputs to be made freely available to the public, scholars and universities have had to think beyond the traditional scholarly communication paradigm, a reality with which our partner universities in Southern Africa were just beginning to grapple.

Another key implication of these mandates is that while some funders such as the European Commission focus their open access requirements on traditional scholarly outputs (such as peer-reviewed journal articles), others such as the World Bank require it for all types of research outputs (including reports, working papers, policy briefs, data, etc.), thereby broadening the very notion of what constitutes scholarly communication. SCAP argued for this enlarged approach to scholarly communication throughout its engagement with Southern African universities, but it will likely only become a mainstream proposition through the continued production and dissemination of such alternative outputs by the scholarly community in response to incentives such as funder mandates and institutional reward systems.

Along with these funders, many universities have also adopted open access policies governing the dissemination of their faculty members' research outputs, including Concordia, Dartmouth, Duke, Edinburgh, ETH Zurich, Harvard, MIT, Princeton, UC Berkeley and the University College London.[63] These universities are contributing to a groundswell of institutionally based action endorsing open access principles.

While funder mandates have given a major financial and policy incentive for scholars to communicate their research openly, the growth of open dissemination platforms (such as OA journals and institutional repositories) has also made such a choice more feasible. For instance, according to Laakso and Björk (2012), between 2000 and 2011, the number of open access journals has grown significantly, as has the number of articles published in an OA fashion. In 2000, 744 open access journals published 20,700 articles. In 2011, 6,713 full open access journals published approximately 340,000 articles. Each year, the proportion of open access articles rises by about 1%, totalling approximately 17% of the 1.66 million articles listed in the Scopus journal article index in 2011. The fact that many smaller OA journals are not even featured in indexes such as Scopus or the Web of Science suggests that the proportion of OA publishing is even higher than often recognised, a fact that confirms the considerable impact that OA outlets are having on scholarly publication (Laakso *et al.* 2011).[64]

This growth has been matched by the expansion of open access IRs where universities curate, profile and disseminate their scholars' research, some of which has been formally published elsewhere. According to the Open Directory of Open Access Repositories (OpenDOAR), the number of IRs worldwide has increased from 128 in December 2005 to

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[61] World Bank Open Access Policy for Formal Publications, available at: http://documents.worldbank.org/curated/en/2012/04/16200740/world-bank-open-access-policy-formal-publications

[62] For a more comprehensive list of funder open access mandates from BioMed Central, see: www.biomedcentral.com/funding/funderpolicies

[63] For a list of universities worldwide with open access policies from BioMed Central, see: www.biomedcentral.com/funding/institutionalpolicies

[64] For an incisive summary of Laakso and Björk's article, see Ben Mudrak (10 November 2012) New study tracks growth of open access publishing, *AJE Expert Edge*, available at: http://expertedge.journalexperts.com/2012/11/10/new-study-tracks-growth-of-open-access-publishing/

2,454 in October 2013.[65] This includes 81 repositories currently in Africa (3.3% of the global total)[66] of which 69 are located in sub-Saharan Africa (40 of these are in Southern Africa). The proliferation of repositories worldwide offers new possibilities for universities to take greater control of their scholarly communication destinies.

These two dissemination mechanisms – open access journals and open access IRs – are the subject of an intense debate concerning which platform offers the most viable, sustainable and affordable OA dissemination mechanism going forward. This debate is known as that between the "gold route" and the "green route".

According to the Joint Information Systems Committee (JISC), the *gold route* involves "publishing in a fully open access journal or website. Subjected to the same peer-review procedures as a traditional journal, the open access journal will usually be available online. Authors may need to pay for their work to be published, although this is very rare as it is often provided for by the research grant. Some institutions even pay these fees out of a central fund to account for the differences between research councils."[67]

The *green route* involves "self-archiving in a repository". While this can lead to logistical challenges (such as getting scholars to upload their own materials), "repositories offer a number of benefits. They increase the availability of some published journal works with restrictions on reprinting or text mining, and may enable work to be propagated across the internet and used for novel applications. Repositories also allow authors to keep track of who is downloading their data."[68]

While SCAP believes that there are merits to both approaches, we did not promote one over the other in our engagements with our partner universities. We were more interested in helping to establish an open access ethos where scholars, managers and librarians could identify and pursue OA strategies in line with their own interests and capacities. Because of this, during the course of our research and interactions with these universities, project participants became attuned to the ways in which international open access trends were impacting scholarly communication opportunities.

Revised approaches to assessing impact

Another key debate shaping international scholarly communication discourse and the policies that universities use to assess their own academics' research revolves around the value and utility of the Impact Factor, a common performance assessment metric. The Impact Factor is a number representing the average number of citations that a journal's

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[65] Growth of the OpenDOAR Database – Worldwide, available at: www.opendoar.org/onechart.php?cID=&ctID=&rtID=&clID=&lID=&potID=&rSoftWareName=&search=&groupby=r.rDateAdded&orderby=&charttype=growth&width=600&height=350&caption=Growth%20of%20the%20OpenDOAR%20Database%20-%20Worldwide

[66] OpenDOAR Proportion of Repositories by Continent – Worldwide, available at: www.opendoar.org/onechart.php?cID=&ctID=&rtID=&clID=&lID=&potID=&rSoftWareName=&search=&groupby=c.cContinent&orderby=Tally%20DESC&charttype=pie&width=600&height=300&caption=Proportion%20of%20Repositories%20by%20Continent%20-%20Worldwide; see the distribution of repositories worldwide through this dynamic Google map from Repository66, available at: http://maps.repository66.org/; see also the Registry of Open Access Repositories (ROAR), available at: http://roar.eprints.org/

[67] JISC, Gold and green: The routes to open access, available at: www.jisc.ac.uk/whatwedo/topics/opentechnologies/openaccess/green-gold.aspx

[68] Ibid.

articles collectively receive during a two-year period. Thus if the Impact Factor for a journal in 2012 is 1.5, then the articles published in that journal in 2010 and 2011 collectively averaged one-and-a-half citations in 2012. The point of the Impact Factor – devised by the Institute for Scientific Information (ISI) in the 1960s and now known as the Thomson Reuters Web of Science (WoS)[69] – is to measure the "impact" of a journal within a given academic field and, by proxy, suggest an evaluation of the relative impact of the articles published within it.

For university managers, the Impact Factor offers a handy "objective" means for estimating the quality and "impact" of a scholar's publication. For instance, during a scholarly assessment exercise (such as for promotion), managers can utilise the Impact Factor to help them gauge the level of contribution that a scholar is making to his or her field. Because there are tens of thousands of journals published globally, and because it is difficult for managers otherwise to evaluate the quality of a scholar's output, the Impact Factor provides a seductive shorthand for helping with that process.

However, in the digital age, where individual articles, chapters and books (or any digital scholarly object) can be tracked and measured through internet technologies, the traditional Impact Factor seems to obscure as much as it reveals. As a tool from the print era, it remains wedded to an outmoded citation-averaging technique (at the journal rather than the article level); it narrowly defines impact as citation rather than use (meaning that it privileges an insular form of scholarly impact rather than a broader notion including social, developmental or industrial impact)[70] and it renders countless research outputs invisible because it excludes thousands of journals (many from the global South) from being considered for an Impact Factor score.[71]

Because of these problems, the Impact Factor has been heavily criticised by scholars (Clobridge 2012; COAR 2012; Ernst 2010; Lawrence 2008; Lehmann, Lautrup & Jackson 2003; Patterson 2009; Rossner, Van Epps & Hill 2007; Seglen 1997; Vanclay 2012), leading many of them to express their collective dissatisfaction by writing and signing the San Francisco Declaration on Research Assessment (DORA) in 2012. The primary recommendation it makes is: "Do not use journal-based metrics, such as Journal Impact Factors, as a surrogate measure of the quality of individual research articles, to assess an individual scientist's contributions, or in hiring, promotion, or funding decisions."[72]

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[69] Thomson Reuters Web of Science (WoS), available at: http://thomsonreuters.com/web-of-science/

[70] The ISI/WoS rankings are often taken as a proxy for development impact. For example, in an important report into the research effectiveness of African universities, the three output indicators used were graduation rates, production of PhDs and publication of journal articles in ISI journals. The latter metric was justified as follows: "ISI-referenced publications represent a narrow notion of research output, but it is what makes it a flagship university and its academics part of the global knowledge community" (Cloete, Bailey & Maassen 2011: xx). A useful critique of this reasoning can be found in this reflective piece: Sam Wineburg (26 August 2013) Choosing real-world impact over Impact Factor, *The Chronicle of Higher Education*, available at: http://chronicle.com/blogs/conversation/2013/08/26/choosing-real-world-impact-over-impact-factor/?cid=cr&utm_source=cr&utm_medium=en

[71] Thomson Reuters WoS does not monitor all journals published worldwide, but just a selected list of 12,000 journals which it considers "top tier international and regional journals in every area of the natural sciences, social sciences, and arts and humanities." This list excludes thousands of journals from the developing world. For more information on "The Thomson Reuters Journal Selection Process", see: http://wokinfo.com/essays/journal-selection-process/

[72] San Francisco Declaration on Research Assessment (DORA), available at: http://am.ascb.org/dora/

Furthermore, the UK's Research Excellence Framework (REF) – the influential research assessment exercise of British HEIs – has dropped Impact Factors from its evaluation process: "No sub-panel will make any use of journal impact factors, rankings, lists or the perceived standing of publishers in assessing the quality of research outputs. An underpinning principle of the REF is that all types of research and all forms of research outputs across all disciplines shall be assessed on a fair and equal basis."[73]

Meanwhile, as scholars and managers start to move away from the Impact Factor, new opportunities are emerging to assess an output's "impact" in a more precise and comprehensive manner. The most important of these is the alternative metrics (or Altmetrics) movement,[74] which promotes the use of data-harvesting technologies that allow computer programmes to track digital scholarly objects as they are cited, downloaded, viewed, liked, tweeted, bookmarked and shared.[75] This permits scholars and managers to get a far clearer understanding of an output's impact and use than the blunt journal-level Impact Factor citation metric. Altmetrics allows for the evaluation of any type of digital scholarly object (journal article, conference paper, policy brief, ebook, etc.) while the Impact Factor is confined to formal journal articles. Moreover, alternative metrics allow scholars to gain a far deeper insight into how their outputs are being used and shared, leading to them being able to tell "impact stories"[76] that detail the real-world effects of their research (which has become a growing component of academic performance assessments).

While the alternative metrics movement is not yet as mainstream as the open access movement, it is creating new options for the many who seek to do away with or replace the Impact Factor. However, in the Southern African context in which we conducted our research, we found that these discussions were not as robust as they were in the global North. The Impact Factor remained a powerful assessment tool for scholars and managers. But through our advocacy work, we were able to raise an awareness of these competing scholarly measurement paradigms, an awareness that will likely grow as article- (or object-) level metrics become more common worldwide.

The national context

In emerging economies, such as those in Southern Africa, governments expect their universities to play a key role in national development through the production and dissemination of knowledge. This desire is revealed in policy statements by government ministers, in university mission statements and in the social discourse concerning the role of universities in emerging economies. This is very much true in Namibia where research and national development are meant to go hand-in-hand. Here we will look at

[73] Research Excellence Framework 2014 – Frequently Asked Questions, available at: www.ref.ac.uk/faq/all/
[74] The global Altmetrics movement was largely born out of the Public Library of Science's (PLOS) work in pioneering article-level metrics in 2006. This shift to a different locus of measurement opened the doors to wide-scale interrogation of previous metrics and exploration of new tools and methodologies which became mainstream in 2011/2012. For more on the ethics and rationale behind the movement, see "Altmetrics: A manifesto", available at: http://altmetrics.org/manifesto/
[75] The most popular services for this are provided by Altmetric, available at: www.altmetric.com/
[76] ImpactStory, one of the services that emerged from the Altmetrics movement, provides scholars with a variety of usage statistics that allows them to construct a narrative interpretation of their work's impact, available at: http://impactstory.org/

that intention as expressed in the government's Vision 2030, Fourth National Development Plan (NDP4) and its Research, Science and Technology Act.

Vision 2030

The major directive guiding all of Namibia's governmental policies is Vision 2030 (Government of Namibia 2004a) which "provides long term alternative policy scenarios on the future course of development … up until the target year 2030."[77] This Vision is meant to "promote the creation of a diversified, open market economy, with a resource-based industrial sector and commercial agriculture, placing great emphasis on skills development."[78]

It also calls for the country to "operate a totally integrated, unified, flexible and high quality education and training system that prepares Namibian learners to take advantage of a rapidly changing global environment, including developments in science and technology. The capacity building will transform Namibia into a knowledge-based society and changes in production and information technology will revolutionise all aspects of the manufacturing process."[79]

The document spells out how these goals can be achieved by moving Namibia towards a "knowledge-based economy" through ICT development, production technology, education and training, policy expansion and so forth (Government of Namibia 2004a: 77–100). As the flagship university of the country, UNAM is imagined to play an important role in this process, though the Vision does not specify its role precisely.

Fourth National Development Plan (NDP4): 2012–2017

The current National Development Plan (NDP4), covering the five years between 2012–2017, is the fourth of seven development plans meant to help Namibia achieve the objectives discussed in Vision 2030. It is defined by three overarching goals: high and sustained economic growth, increased income equality and employment creation. To reach these ends, this NDP has identified key areas of focus that will create the necessary momentum for higher economic growth, namely logistics, tourism, manufacturing and agriculture.[80]

Higher education is not the focus of the plan, though its role is implied in the priority given to increased research and development funding and activity. It would likely also form a crucial mechanism in researching poverty, one of the key desires listed. The plan does seek to "promote the establishment of centres of excellence, more applied research, and additional institutions of higher learning" (Government of Namibia 2012: 121), thus the base that the university provides in terms of research is considered something to be leveraged and built upon.

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[77] National Planning Commission, Vision 2030, available at: www.npc.gov.na/vision/vision2030.html
[78] Government of Namibia, Vision 2030 Overview, available at: www.gov.na/vision-2030
[79] Ibid.
[80] Government of Namibia, Fourth National Development Plan (NDP4), available at: www.gov.na/ndp-4

Research, Science and Technology Act (2004)

In 2004, Namibia's Parliament passed the Research, Science and Technology Act which came into force in late 2011. The stated aims of the act are to "provide for the promotion, coordination and development of research, science and technology in Namibia" by establishing a National Commission on Research, Science and Technology (NCRST) to regulate, oversee and fund (through a National Research, Science and Technology Fund) local research efforts (Government of Namibia 2004b: 2). The commission has only recently been established,[81] but the law is intended to enhance the research infrastructure of the country and provide greater support for research that has developmental applicability. Such research commissions and funds typically add a beneficial dimension to locally-determined research endeavours and it is one of the recommendations that SCAP usually makes for a country that wants to improve its research output.

However, the Act has come under considerable criticism by Namibian NGOs, research entities and civil society bodies which claim that the law serves more to stifle and control research rather than promote and open it. One group went so far as to argue that the Act "appears to violate both the letter and spirit of the Constitution, and the very idea of democracy and the free marketplace of ideas, characterised by the freedom of speech, thought and debate which helps sustain any democracy."[82]

These organisations argue that the law:

- Defines research too broadly (such that a high school student's research essay or a piece of investigative journalism could be defined as "research" and therefore be subject to the Act)[83]
- Stacks the commission with political appointments, minimising the participation of researchers, academics and civil society organisations (the purported beneficiaries of this law)
- Gives the president of the country absolute discretion in issuing "general policy directives" to the commission, thereby limiting its autonomy and independence
- Requires all researchers and research institutions to register with the commission and gain permission to conduct research from the relevant minister, an onerous requirement that will curtail rather than inspire research in the country[84]

According to the Open Society Initiative of Southern Africa (OSISA), "this Act will set Namibia on the path towards limiting the space and ability to participate in knowledge

[81] Unfortunately, the NCRST has been dogged by controversy since its inception relating to who should be appointed to the body. See Theresia Tjihenuna (10 October 2013) Infighting rocks research commission, *The Namibian*, available at: www.namibian.com.na/indexx.php?id=4816&page_type=story_detail
[82] John Grobler (16 March 2013) Red tape threatens to strangle science, *University World News*, available at: www.universityworldnews.com/article.php?story=20130315085640498
[83] Namibia Economist (2012) "Research Act a threat to researchers – MISA", available at: www.economist.com.na/general-news/2169-research-act-a-threat-to-researchers-misa
[84] For the three final points of this list, see Delme Cupido (19 October 2012) Clear and present danger, OSISA, available at: www.osisa.org/law/blog/clear-and-present-danger

production – something that is absolutely vital to the development of knowledge-based economies."[85]

Though this is an issue that will likely take some further time to sort out (as civil society organisations engage with the government and seek to alter the Act's regulations),[86] the critiques levelled at the Act remind us that there is a fine line between what a government calls "coordination" and what researchers experience as simply "control".

While SCAP has, in general, supported the idea of vertical policy alignment – such as when university research fits in with institutional and national research policy aims – this support has been predicated upon a policy structure informed by civil society participation, openness, transparency and intellectual freedom. Policy "alignment" or "coordination" should not act as a discursive tool to legitimate the suppression of research activities. At the moment, it is difficult to tell whether the Act will have a "chilling effect" on research (as civil society organisations claim)[87] or whether it will inaugurate a renaissance of research activity (as the government suggests). Either way, it will likely have a decisive impact on whether Namibia becomes a site of research innovation or stagnation in the future.

The institutional context

At an institutional level, UNAM's official scholarly communication approach is very much in line with the national policies discussed above, though it has had to creatively translate the desires of the government for its own academic context. As UNAM's vice-chancellor states in his foreword to a recent UNAM Research Report, "UNAM's research agenda is based on National Development Plans (NDPs) and Vision 2030 and other national policies such as the Research, Science and Technology Act of 2004" (UNAM 2009: 5). This process – of policy alignment and translation – is best captured in UNAM's Vision and Mission, UNAM's Research Strategy, UNAM's 5-Year Strategic Plan, the university's various promotion, teaching and publication assessment guidelines, as well as the newly-ratified Scholarly Communications Policy.

UNAM Vision and Mission

At the heart of the UNAM vision and mission is a commitment to developing the potential and prospects of the Namibian people. The vision of the university is to:

> *engage with society in the creation and dissemination of knowledge, through teaching, research and advisory services, and a commitment to lifelong learning; thereby becoming a treasure house of knowledge at the service of*

[85] Quote by Deprose Muchena, the then Acting-Director of the Open Society Initiative for Southern Africa (OSISA), re-quoted in Delme Cupido (19 October 2012) Clear and present danger, OSISA, available at: www.osisa.org/law/blog/clear-and-present-danger
[86] Selma Shipanga (8 April 2013) Namibia: Research Act changes to be discussed, *AllAfrica*, available at: http://allafrica.com/stories/201304121130.html
[87] Selma Shipanga (9 November 2012) Namibia: Law threatens research, *AllAfrica*, available at: http://allafrica.com/stories/201211090474.html

> *national development, and available to all in forms directly relevant to the improvement of the quality of their lives.*[88]

This is further inflected by the UNAM mission to:

> *engage in socially and nationally relevant, academic and technical training, research and educational programmes with the involvement of all stakeholders in a conducive environment for learning, innovation, knowledge creation, professional development, functional skills development and development related competencies, within the cultural context of the Namibian people.*[89]

In order to achieve this, the university has committed to a number of operational principles, including:

- Prioritising "applied research" and "inter-disciplinary approaches" to solving "real-world problems"
- Serving as "a repository for the preservation, development and articulation of national values and culture, through the promotion of Namibian history, art and languages"
- Undertaking "basic and applied research, with a view to contributing to the social, economic, cultural and political development of Namibia"
- Providing "advisory, consultancy, and extension services throughout the country, with the view to promote community education and appropriate know-how, thus enhancing Namibia's productivity and socio-economic development"[90]

What this vision and mission suggest is that the university sees itself as a servant to society, seeking to make a direct contribution to the development of Namibia with teaching, research and service that is locally relevant. While mindful and interested in also securing international recognition and prestige, the top priority by far is having an institution that is responsive to Namibia's immediate and long-term needs.

UNAM Research Strategy

In 2005, UNAM adopted an institutional research strategy that aimed for the university to "become a research institution of international repute in various key areas of research excellence which create and share knowledge needed for the upliftment of the quality of life of our people" (Kiangi 2005: 1). While the strategy emanated from the values of the university's mission and vision discussed above, it took on a more ambitious language as far as impact goes, pushing for research to not only impact nationally, but regionally and internationally as well. It is a document that asserts an ambition for the university to see itself as more than just a teaching university, but one with a solid research contribution to make. Generally, the research strategy intends to:

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[88] UNAM Vision and Mission, available at: www.unam.na/about_unam/vision_mission.html
[89] Ibid.
[90] Ibid.

- Guide UNAM to carry out research relevant to national and regional importance.
- Encourage interaction with and attract eminent scholars of repute who will catalyse research activities and raise the research profiles of the various research groups in different areas of excellence, to ensure that the university conducts research that makes a difference.
- Increase the proportion of staff engaged in internationally excelling research.
- Improve research funding and the overall financial return in investing on research.
- Promote research collaboration within the university, and with the private and public sectors, and any associated strategic alliances, in order to encourage commercial exploitation of the university's research outputs.
- Promote a culture of research within the university where all staff members willingly cherish the novelty of engaging in research, where trust and confidence prevail to support free expression of ideas, as these are essential for discovery and innovation.
- Develop a framework for quality assurance, monitoring and evaluation.
  (Kiangi 2005: 4)

While this research strategy is currently under review and will likely be replaced with an updated version, it marks a key moment for the university in terms of broadening its mission to include greater research commitment in an otherwise teaching-oriented institution. It also legitimates the university's quest for international prestige and recognition (though it does so in rather mild terms compared to many other universities). This twin ambition for local relevance and international recognition will likely gain greater impetus over time as UNAM's research culture matures.

UNAM Strategic Plan (2011–2015)

The current UNAM Strategic Plan identifies a number of ambitions aimed at improving its teaching, research and service dimensions. A key mechanism for incentivising these changes at an individual level is the deployment of performance contracts that scholars must sign and discuss with their supervisors (UNAM 2011d: 2). This is meant to enhance scholars' accountability for their various commitments (and is a standard tool of management found at many universities). But regarding the plan's goals for research and scholarly communication, three targets stand out.

First, UNAM seeks to increase research output in two areas: its number of refereed publications from a baseline of 90 to 160 by 2015, and its number of other publications from a baseline of 305 to 400 by 2015 (UNAM 2011d: 15). This shows a desire by the university to gradually ramp up its research activity during this five-year period. It also reveals how important non-refereed outputs remain for the university because scholars are incentivised to produce outputs not only for other scholars, but also for the government, industry and civil society.

Second, UNAM aims to "strengthen international liaison and collaboration" by raising the number of existing and operational international co-operations from a baseline of 30 to 80 by 2015, and by increasing the number of active collaboration agreements from a baseline of 14 to 80 in 2015 (UNAM 2011d: 23). This represents a massive upgrade in collaborative interactions, but the stability and growth of the institution bode well for

such ambitions. These increased engagements would open up greater research opportunities and strengthen the research culture at the university.

Third, UNAM wants to "enhance community engagement" by raising the number of successful community interactions from 35 in 2011 to 50 in 2015. It also wants to raise its stakeholder satisfaction rating from 20% in 2011 to 60% in 2015. It will do this by conducting surveys, formulating and implementing policy on community service and engagement, and documenting and publicising its activities (UNAM 2011d: 17). This will extend the reach of the university's research to the non-academic audiences of the country who would also benefit from their results.

During SCAP's engagement with UNAM, we saw a good deal of evidence that the university was serious about meeting these targets. Its responsiveness not only to our programme, but to others as well, signalled that it was open to experimenting with new and innovative methods to reach its goals. That seriousness was not only expressed in personal interactions, but in the policies established to guide teaching, publication and promotion activities.

Teaching, publishing and promotion assessment guidelines

According to UNAM's various teaching, publishing and promotion assessment guidelines (UNAM 2011a, 2011b, 2011c), academic staff are expected to spend about 60% (24 hours/week) of their work time teaching and giving lectures, 30% (12 hours/week) doing research and publishing, and 10% (4 hours/week) doing service, administration and community work. As we will see in the next chapter, these proportions are difficult to achieve for many FHSS scholars who find themselves stretched in terms of teaching and administration work. Indeed, the high teaching demands suggest that the university is still structured by its teaching commitments, and that the research mission is still in the process of being established and recognised in terms of time allocation.

However, when research outputs are published, they are evaluated and rated by the university depending on their type and distribution mechanism. Academic books, book chapters, journal articles, academic conference/workshop proceedings, reports (consultancy, technical and commissioned), teaching manuals, contributions as editor, and creative works are all considered published works worthy of assessment (UNAM 2011a, 2011b). The point allocation system (shown as Table 5.1 in Chapter 5) rates the value of these outputs for promotion purposes, giving greater weight to international peer-reviewed outputs compared to locally published non-reviewed items (which is similar to the other university assessment systems we looked at). Though none of these take into account whether an output is open access or not, the sheer variety of outputs recognised in the system allows for scholars to produce outputs that can reach a diverse number of audiences locally and internationally.

Academics are promoted on the basis of the number and value of publications they have produced. The value of those outputs are considered in light of the general promotion criteria, which, for each position, consists of the following (UNAM 2011c: 10–11):

> *Staff development fellow to assistant lecturer*
> Three years of satisfactory service as staff development fellow or equivalent at

UNAM (which includes satisfactory record in conducting seminars, tutorials, and practicals, and making good contributions in community service, or good progress in postgraduate degree study).

Assistant lecturer to lecturer
Normally possession of a masters degree (or equivalent)

Lecturer to senior lecturer
Normally possession of a doctorate degree, at least three years of lecturing experience at UNAM, and at least four publications (which represent at least 8 publication points); at least two of the publications must be refereed articles; two publications (which represents at least 4 publication points) must have been published since attaining the grade of lecturer), [or]
A masters degree with three years of service as lecturer at UNAM, and at least seven publications (which represent at least 14 publication points); at least three of the publications must be refereed articles; four publications (which represents at least 8 publication points) must have been published since attaining the grade of lecturer).

Senior lecturer to associate professor
Possession of a doctorate degree, and three years of service as senior lecturer at UNAM, satisfactory record of teaching, research and publications, and service to academic and wider community, and a cumulative record of 17 publications (which represents at least 34 publication points); seven publications (which represents at least 14 publication points) must have been published since attaining the grade of senior lecturer; at least six of the publications must be refereed articles.

Associate professor to full professor
Possession of a doctorate degree, and three years of service as associate Professor at UNAM, satisfactory contribution in teaching, research and publication, and service to the academic and wider community; and a cumulative record of 25 publications (which represents at least 50 publication points); seven publications (which represents at least 14 publication points) must have been published since attaining the grade of associate professor); at least 12 of the publications must be refereed articles.

In combination, these guidelines and policies are suited for an academic environment characterised by high levels of teaching engagement, modest levels of doctoral degree attainment (allowing masters degree holders to enjoy up to a senior lecturer status, depending on years of service) and modest levels of research publication productivity. They recognise both teaching-oriented and publication-oriented career choices, though they signal a desire for more research production through greater status and financial rewards for those who achieve high levels of publishing productivity.

UNAM Scholarly Communications Policy

The last element of the institutional policy landscape is the newly ratified Scholarly Communications Policy (UNAM 2013). It did not exist when SCAP first engaged with the university, but through the university's own desire for such a policy and through SCAP's encouragement for developing it, it was drafted and passed by the senate at the end of our interaction with UNAM. It explicitly acknowledges the role that SCAP played in helping bring it to fruition, stating, "the Scholarly Communications in Africa Project of the Faculty of Humanities and Social Sciences (2011–2013) has proved to be a valuable pilot project in this regard and has identified many of the issues to be considered in the development of a scholarly communications policy for the University" (UNAM 2013: 4).

The Scholarly Communications Policy contains many of the strategic elements that SCAP was keen to foster, especially regarding the importance of open access strategies. The policy accepts the need for OA dissemination practices, stating:

> *The University recognises that as a largely public-funded institution, it has an obligation to share its research findings and scholarly outputs with all stakeholders and the wider society. It also recognises that the Open Access model of scholarly communication is a means to advance research. It allows scholarly outputs to reach a much wider audience, and thus to be cited more often, which raises the profile of the author/knowledge producer and the University*. (UNAM 2013: 8)

It goes on to state that "the University needs to position itself with regard to the growing international Open Access movement whereby academic institutions, including more than twenty in Africa, are opening up and making their research available through the internet, often free of charge" (UNAM 2013: 4).

Beyond this, "the fundamental purpose of the Scholarly Communications Policy is to increase access to information, knowledge, research, and artistic and creative works, in order to facilitate the academic enterprise at the University and advance the progress of society" (UNAM 2013: 5).

With this OA commitment in mind, the policy aims to:

- Provide a framework and guidelines for communicating UNAM scholarly outputs.
- Raise the profile of UNAM's research and enhance its impact and contribution to national development.
- Establish common standards of academic writing and scholarly outputs at UNAM.
- Ensure quality by promoting adherence to best practices in UNAM's outputs.
- Make UNAM's outputs accessible in different formats to different audiences.
- Establish sustainable management strategies for communicating UNAM outputs.
- Strengthen the preservation and archiving of UNAM's scholarly outputs. (UNAM 2013: 5–6)

The policy goes on to discuss other critical areas of concern, including quality assurance practices, types of outputs covered by the policy, the role of the new IR (to be discussed in Chapter 6), the activities of the scholarly communication coordinating committee, the meaning of the policy for the university's various research centres, the role that UNAM

Press will play in making the policy effective, and various budgetary issues for implementing the policy.

Though this policy has only been ratified recently, it likely marks the beginning of a new era for UNAM research and its visibility.

Conclusion

In this chapter, we have tried to provide a snapshot of the policy landscape shaping UNAM research and communication activities. As we have seen, the international context is being radically reshaped by the open access movement, which has been embraced by numerous funders, institutions and scholars. It is turning conventional understanding of scholarly communication on its head. The global context is also being informed by provocative demands for a new type of scholarly metrics, one that goes beyond the traditional Impact Factor toward an alternative or complementary metrics that leverages the data-generating capacity of the internet. These alternative metrics seek to broaden the social and developmental meaning of a scholarly output's "impact".

As a young country, Namibia's research policies are highly self-reflective, focused on dealing with the immediate, local socio-economic challenges facing most Namibians. This approach hopes to harness the potential of national research for the sake of making a direct impact on the lives of the country's residents. Vision 2030 and the successive National Development Plans lay out the broad parameters of the government's developmental desires, but it is only now starting to establish the research infrastructure necessary to leverage its desires through a national research commission and fund. However, as we have seen, this process has not been without controversy, as civil society organisations warn that the Research, Science and Technology Act may end up controlling rather than promoting research outcomes. Whether this is the case will only become clear in the future.

At the institutional level, UNAM's research and communication policies have largely followed the guidelines established in the national government's policies. As the country's flagship university and a public institution financed largely by the government, it makes sense that its own policies would reference the government's, even if it should preferably continue to enjoy some level of autonomy and independence. At the moment, UNAM has done far more than simply follow the lead of the government, but has creatively translated its intentions for its own academic purposes and increasingly referenced global trends in research and scholarly communication. This was made most clear in the recent ratification of a Scholarly Communications Policy that is based on open access principles that seek to make available the university's research to those who can leverage it for intellectual and developmental gain.

Chapter 5.
Research & communication practices

SCAP's research examines the scholarly communication ecosystem at four Southern African universities in order to address the primary research question: What is the current state of scholarly communication in African universities?

To answer this question at the University of Namibia (UNAM), we focused on the scholarly communication ecosystem of the Faculty of Humanities and Social Sciences (FHSS), the SCAP research and pilot site.

From an ecosystems perspective, the faculty is a useful unit of analysis for understanding scholarly communication because it reveals the values, norms and practices specific to the relevant disciplines (humanities and social sciences), while at the same time offering crucial insights into the values, norms and practices of the entire institution (UNAM). A departmental focus would be too narrow (since most of its practices are structured by insular field norms) and an institutional focus would be too broad (since it is shaped by the multiple disciplinary norms within the faculties), but a faculty focus provides the necessary access to both micro and macro fields of operation.

The key virtue of the ecosystem approach for understanding scholarly communication is that it is based on the principle of interconnectivity (Benkler 2006; Cronin 2003; Friedlander 2008; Maron & Smith 2008). Every feature of the ecosystem is connected to every other in a web of mutual responsiveness, a fact that has crucial implications for the analysis of that system, and for any proposed intervention into it. The SCAP team was interested in both of these possibilities.

This chapter describes and analyses the UNAM FHSS scholarly communication ecosystem. It does so by assessing the faculty's profile, temporal obligations, values, research production and dissemination activities, rewards and incentives, and perceptions of the African context. Most of the chapter is concerned with detailing the elements of this ecosystem and how scholars act within it, providing a "thick description" of this particular environment. The rich detail we provide allow for important analytical opportunities and also lay the foundations for our analyses in the later chapters.

Faculty profile

The FHSS comprises 77 academics, of whom 32 (42%) hold PhDs and 36 (47%) hold masters degrees. While a number completed their graduate studies in Namibia, a significant number did their PhDs abroad at universities in the UK, USA, Netherlands, Russia and South Africa. There is also a fair amount of circulation of academics between African countries, as one manager noted: "We do get a lot of applications here from neighbouring universities. Increasingly we are getting applications from Botswana as well as others, one or two from South Africa, but I know those are coming here because they are looking for quick promotion, they stay one or two years and then they go back."

Age

There is a slight preponderance of staff who are aged between 51 and 60 years old (40%) while there are solid proportions in the 31–40 (28%) and 41–50 age group (20%). Only 6% are aged 21–30 and 6% are over 60 years old. This suggests that the faculty is "mature", with many academics at the peak of their careers. However, with more than half of the faculty under the age of 50, it should provide a stable base of scholars in the years to come.

Years of research experience

A total of 33% of FHSS staff members have only 1–5 years of university research experience (yre), while each of the next five-year increments are between 14–22% each: 6–10 yre (14%), 11–15 yre (22%), 16–20 yre (14%), 20+ yre (16%). There is thus a good spread of research experience, but with a significant group of relatively inexperienced staffers. This suggests that either these are all recent hires to the university, or they have only recently received the directive to include research in their workloads. Considering both the recent expansion of the university and the inclusion of many staff members from the former teacher training colleges into the faculty, it would appear to be a combination of both.

Positions

Over 70% of the UNAM FHSS members are assistant lecturers or lecturers, with only 24% holding the position of senior lecturers or above. This conforms to a pyramid shape of positional hierarchy in which a large base of "junior" positions (lecturers and assistant lecturers) supports a gradually tapering cohort of "senior" positions (senior lecturer, associate professor, professor). But it is the sheer size of the lower positional strata that is noteworthy here: because of the university's strong teaching heritage and its recent merger with the country's four teacher training colleges, there is a substantial base of teaching-focused staff in the FHSS:

- assistant lecturers: 10%
- lecturers: 62%
- senior lecturers: 12%
- associate professors: 8%
- professors: 4%

Salary scales

UNAM academic staff are paid relatively competitive salaries for the region. These are the annual salary scales for 2013:

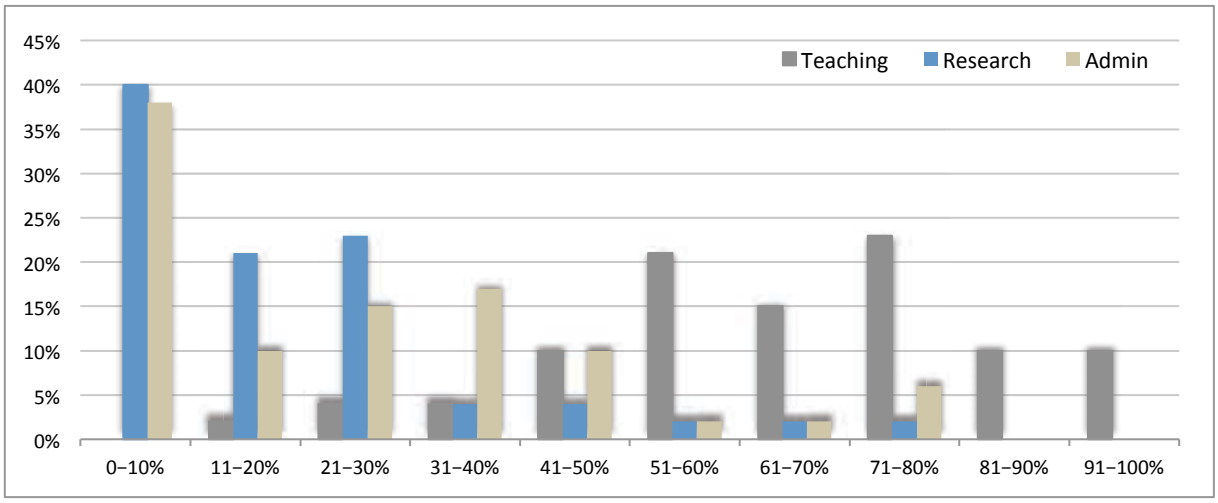
- Staff development fellow/tutor: N$164,076–219,876 (USD16,573–22,210)[91]
- Assistant lecturer: N$193,776–261,756 (USD19,573–26,440)
- Lecturer: N$224,088–303,936 (USD22,635–30,700)
- Senior lecturer: N$268,032–368,688 (USD27,073–37,241)
- Associate professor: N$309,456–423,012 (USD31,258–42,728)
- Professor: N$360,816–483,216 (USD36,446–48,810)

These salaries are also padded by a number of benefits such as a pension, housing allowance, transport allowance, social security, medical aid and a bonus or 13th cheque.

Time spent on teaching, research and administration

UNAM FHSS scholars say that they spend the bulk of their time engaged in teaching-related activities (timetabling, prepping, lecturing, marking, advising, invigilating, etc.), as well as supervising graduate students and acting as internal and external examiners of theses. The median indicator from their survey responses is that these activities comprise about 60% of their time, precisely the amount called for in UNAM's teaching guidelines. As Figure 5.1 shows, there is some diversity within the faculty as to the teaching load, but the vast majority spend more than 50% of their time on teaching-related activities.

Figure 5.1 UNAM FHSS respondents' self-reported teaching, research and administrative time (%) (N=50)



According to the *UNAM Policy on Teaching Workloads* (UNAM 2011a), scholars are supposed to aim to apportion their times thus: 60% on teaching, 30% on research and 10% on service and administration. According to our survey data, scholars are meeting or exceeding the 60% teaching requirement, but they are experiencing an inverse relationship between research and administration activities. Most say that they are

[91] Exchange rate: 1 USD = 9.9 Namibian dollars (23 August 2013)

unable to spend 30% of their time on research because of demanding administrative requirements. This challenge is summed up by one scholar, who said, "most of us lecturers really feel that the teaching load is just too much. It doesn't leave us enough time really to do research. Most lecturers are overloaded."

According to the workloads policy, "each staff member should maintain an average of between 24 and 28 hours per week over the academic year on teaching and teaching related activities. Additional remuneration will only be considered if a staff member maintains an average teaching work load of more than 28 hours over the entire academic year" (UNAM 2011a: 2).

Nevertheless, it is up to the scholars themselves to continue to make research progress no matter their teaching or administrative loads. The policy further states:

> *It remains the responsibility of staff members to ensure and provide evidence that research and research output is not negatively affected by excessive teaching loads that result in additional payment. The research productivity of all staff members will be evaluated through the Annual Staff Appraisal process and teaching beyond the maximum of 28 hours per week over the academic year will not be accepted as a valid reason for not engaging in research activities.* (UNAM 2011a: 2)

This is because:

> *While staff members may find that the actual time that they spend on teaching and teaching related activities per week during the semester amounts to more than what is credited to them through the formula, it should be remembered that they are only teaching for 28 weeks of the year and that the overall balance is achieved by spending more time on research and preparation during the non-teaching times.* (UNAM 2011a: 2)

There were additional demands in the area of teaching, like setting up new courses, curriculum reviews and working with distance students. One academic said:

> *Another big issue for me was that there was no masters degree in [my subject]. So that is something that I really, really fought for. And then over the last two years we had to do a curriculum review. I did a lot of the work for that. It was extremely hard work and I was happy that we were the only one that was actually accepted more or less immediately at Academic Programmes committee and sent through to Senate.*

The median indicator for the amount of time scholars engage in research-related activities (reading secondary literature, interviewing subjects, carrying out experiments, writing articles, etc.) is 15–20%. This is lower than most would prefer, and many have to use evenings and weekends to conduct or write up their research. The biggest part of the problem is remaining true to the teaching orientation of the university while also trying to forge ahead with good research. Often these are conflicting priorities.

A slightly greater amount of time is self-reported as comprising scholars' administrative tasks (a median of about 25–30%), a proportion that they wish they could decrease so as to focus on other work. As one scholar complained:

> *We find that academics often have to do clerical duties like registering students. You sit the whole week in an office or some conference room registering students manually. And this means that you don't even move an inch until the registration is done. That's not all. The production of transcripts and grades and the invigilation of exams are all done by the academics. So they spend maybe a third of their time doing clerical duties like those.*

They believe that many of these administrative chores could be handled by auxiliary staff or graduate students.

One academic, despite not having a PhD yet, had been head of department (HoD): "I stepped down as HoD in December. You know there's no way; my career was dying; there's no way I can be productive. I'm at the peak, actually, of my career; I can't do it [such administrative work as required of the HoD's position] now; I'm really at the peak."

At UNAM, the focus on development was apparent in all of our interactions and a sense of community involvement was infused throughout the accounts of their research. There seemed to be considerable engagement with government ministries and academics played high profile roles in this, with some even on a paid consultancy basis. One said:

> *Research is always a concern; it's always a concern. I will not give up my role on [a government] committee; I will not compromise on that because I can see the benefit for the whole country; we will take the country to bigger and better strides in life, and higher heights. I want learning to have the priority it deserves but we are HoDs; we teach; we have to do research; we have to be involved in community services, so when do you get the time to make sure the institution is taking off? So it's not easy, one has to make choices and I think I live for my teaching.*

These temporal demands suggest that the focus of the university remains primarily teaching-oriented rather than research-oriented.

Values

To better understand scholarly communication practices at UNAM, we started by trying to grasp academics' motivations for conducting research and publishing their findings. Essentially, we wanted to know what values underpinned their research and communication activities.[92]

[92] According to Schwartz, all values are defined by the following six qualities: (1) Values are beliefs linked to emotion; (2) Values are desirable goals motivating action; (3) Values transcend specific actions or situations; (4) Values serve as standards or criteria; (5) Values are ordered by importance relative to one another; (6) The relative importance of multiple values guides action (2012: 3–4). As trans-situational abstract goals that form part of a hierarchically ordered system, values are distinguished from "concepts like norms and attitudes, which

This is a foundational question, one that is usually taken for granted in the literature on scholarly communication. Other studies, which usually focus on scholars from the global North, tend to assess academics' attitudes towards research-*related* issues such as peer review (Harley *et al.* 2007), dissemination outlets (Harley *et al.* 2010; King *et al.* 2006; RIN 2009, 2010; Rowlands & Nicholas 2005), journal quality (Regazzi & Aytac 2008), digital and Web 2.0 technologies (RIN 2010; Rowlands, Nicholas & Huntingdon 2004; Rowlands & Nicholas 2006; Schauder 1993), open access publishing (RIN 2009) and academic identity (Archer 2008).

These valuable studies shed light on scholars' attitudes toward elements of their research and communication practices, but they do not get at the more basic question of why the scholars conduct research in the first place. In Africa, where most universities have only recently incorporated a research mission into what have long been teaching-oriented institutions, the question of why scholars conduct research is a pertinent one, and the answers cannot be assumed. Moreover, the purpose of university research on the continent is shaped by more than just the desires of the scholars themselves, but by those of the national government, the institutions' managers, overseas funders, local NGOs, students and community stakeholders. Thus all of these diverse interest groups impact how scholars view the research enterprise.

Based on numerous interviews, surveys, conversations and observations (described in Chapter 2), SCAP found that the main reasons why UNAM FHSS scholars conduct research are (in order of importance) to:

1. Generate new knowledge [and] enhance teaching
2. Earn points toward promotion
3. Achieve satisfaction by fulfilling personal desires [and] aid national development
4. Feel joy through making a contribution
5. Comply with institutional mandate
6. Obtain indirect financial rewards
7. Observe the dictates of their job descriptions

These motivations would be familiar to scholars at most universities, though the importance accorded to each would be influenced by the contextual factors shaping the institution, such as its history, infrastructure, wealth and mission. The significance and uniqueness of UNAM FHSS's research values become clear, however, when we analyse them in greater detail and compare them to the values held by scholars at other Southern African universities.

In analysing scholarly research values, it is useful to assess to what degree they are based on intrinsic or extrinsic motivations. A significant psychological literature explicates the virtue of this approach (Kreps 1997; Ryan & Deci 2000; Teo, Lim & Rai 1999; Vallerand *et al.* 1992) and here we will use it to get a nuanced understanding of not only UNAM

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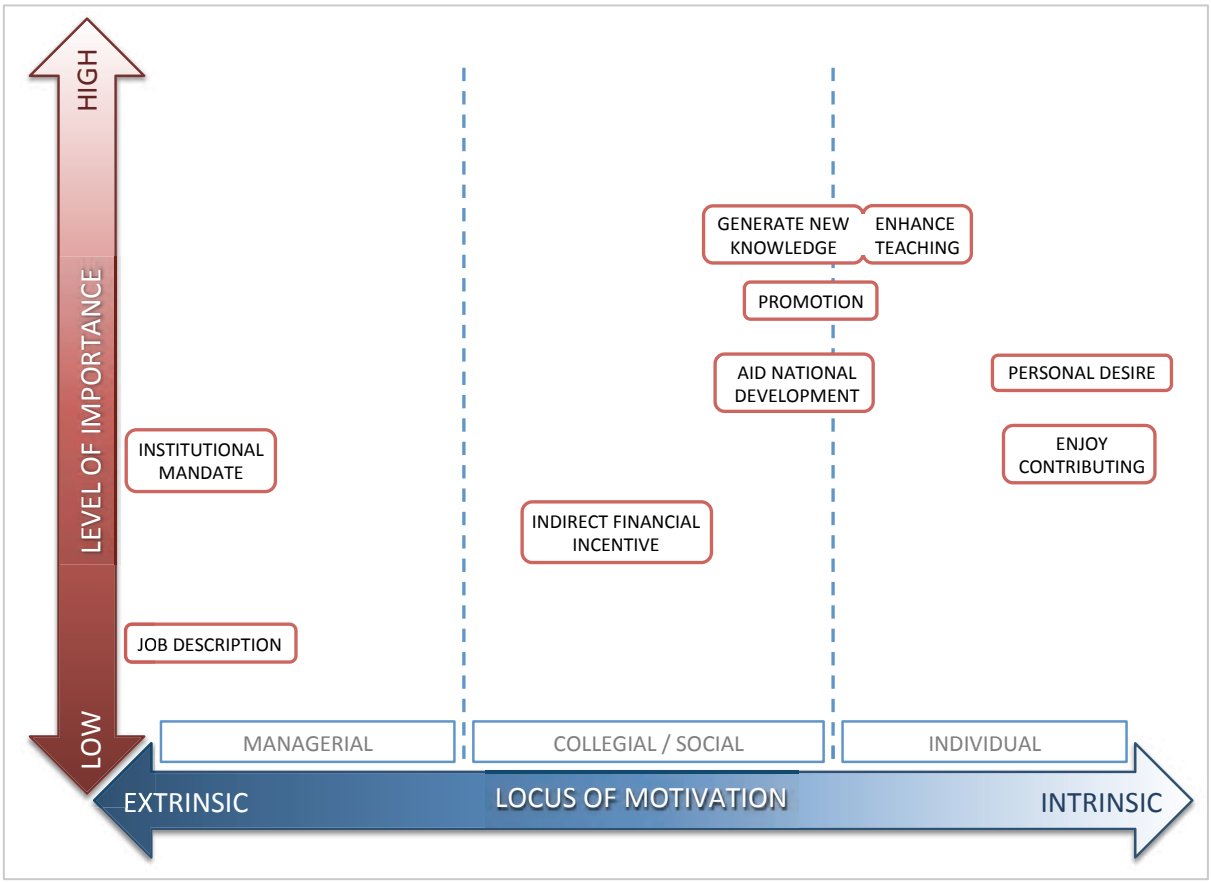
usually refer to specific actions, objects, or situations" (Schwartz 2007: 1), and need not be hierarchically ordered. Examples of such values include power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity and security (Schwartz 1994: 22). In this report, the term values will be used in a slightly more open way, beyond universal abstractions such as benevolence and security, though such deeper values will often underpin the more concrete value expressions noted here in the university context.

scholars' values, but also the "institutional culture" (Bergquist & Pawlak 2008) that shapes it and the "research culture" that is produced by it.

To aid our analysis, in Figure 5.2 we have plotted UNAM FHSS scholars' values according to their level of importance for motivating research (x-axis) and the degree to which these values arise from intrinsic or extrinsic motivations (y-axis). We have then further divided the intrinsic-extrinsic continuum into the three loci of motivation that are most relevant in the university context: the managerial (extrinsic), the collegial/social (mixed extrinsic and intrinsic) and the individual (intrinsic). This trifurcation offers a more precise delineation of scholars' motivational sources at UNAM FHSS.

Figure 5.2 Values motivating UNAM FHSS scholars to conduct research (aggregated and ranked)



On one end of the continuum, purely extrinsic motivations emanate from the university management. These are the values of the administration that are communicated through formal mechanisms such as institutional mandates (policies) and job descriptions (contracts). When scholars respond to these managerial incentives, their responses can be described as acts of *compliance*, in that their behaviour aligns with external requirements but without any sense of personal buy-in.

On the other end of the continuum, purely intrinsic motivations emanate from within the individual. They express a scholar's idiosyncratic desires, revealed internally as feelings of joy, integrity, virtue and growth. Intrinsically motivated scholars enjoy the research process as an end in itself. When scholars respond to this interior motivation, their

responses can be described as acts of *congruence*, in that their behaviour aligns with their own personally held values and desires.

In the middle of this continuum is a space where extrinsic and intrinsic motivations meet; where, in the university context, external collegial and social demands structure internal personal desires. This occurs because the individual scholar identifies with and feels a member of the collegial or social group defining the value. When scholars respond to this motivation, their responses can be described as acts of *conformity*, in that their behaviour aligns internal desires with externally structured values.

Figure 5.2 shows that while UNAM FHSS scholars are motivated to conduct research by both intrinsic and extrinsic factors, the top reasons they do so are to enhance teaching and to generate new knowledge. This makes sense for a couple of reasons. First, as a teaching-oriented institution, research has great utility for scholars who want to stay current in their field and to learn new ideas through research activity. With a strong teaching heritage – and the heavy teaching loads that scholars face – the primary audience for many of their research ideas is their students, some of whom assist in their research and publication activities. We located this value on the line between social and individual motivation because most of the desire to "enhance" this aspect of their work derives mostly from themselves as individuals, and to a certain extent by their students. Since the administration evaluates teaching performance more according to quantity (hours) rather than quality, scholars' desire to improve it emanates from themselves, with feedback from their students helping to structure their efforts.

Equally important, many FHSS scholars want to "generate new knowledge" through their research, a relatively intrinsic motivation, but structured by their field of inquiry and the various "gaps" it contains for a scholar to fill. For FHSS scholars, the "gaps" in national humanities and social science research are enormous. They see the country as "virgin territory" for researchers who can explore numerous topics, often producing the first research on a topic in Namibia. They are excited about this fact, that their research can help form the foundation for a truly national scholarly enterprise. As one scholar related, "you want to do that kind of research which can close the gap where other people across the globe can relate to your work."

The second most important factor for motivating research in the FHSS is the scholarly desire for promotion, a value that is also highly rated at other southern African universities. On the diagram, we located promotion on the line between collegial and individual motivation because promotion not only satisfies an intrinsic desire for greater financial reward, but also elevates the prestige of the scholar in the eyes of their peers according to a status structure largely derived from collegial norms and traditions. One scholar described it thus: "To go up in the academic environment, you need to prove that you have contributed in terms of teaching as well as in terms of research outputs." As a motivating factor, promotion is one of the most ubiquitous, durable and reliable means for encouraging any type of behaviour to which it is connected. As one manager explained, "at this university, if you don't do research, your chances of getting any promotion remain zero. So that becomes my main motivator to make sure that I publish."

Third, in a teaching-oriented institution where there is comparatively little peer pressure to produce research outputs, FHSS scholars rank personal desire as their third most

important motivator for conducting research. Such internal motivation is often necessary in an environment where external motivating factors are mild. As one scholar shared, "personally I just enjoy doing research. It's very important that you as a researcher enjoy what you do." But this desire is shaped by the contours of one's career and age. Echoing the sentiments of a number of scholars, one academic noted that:

> *[research motivation] depends at what stage you are in your career. That will really define why you do research. For me, personally, it's to grow and to grow my career and also I rely on that to give me direction, because I'm not at the level where I'm comfortable to teach at an academic level if I don't continuously update myself through research. It's like I'm still learning, still growing. So that's the reason why I do research. It is used for practical reasons, but for personal growth. It really influences teaching and it improves your understanding of one another.*

Rated equally with personal desire, FHSS scholars would like their research to "aid national development". Of all the universities SCAP profiled, UNAM scholars showed the greatest interest in promoting national development through their work. This makes sense given the young age of the institution, and the nation, making the importance of their contributions at this stage that much more important.

Fourth, FHSS scholars also enjoy the simple act of making a contribution, especially to their field. They like the idea that their work will have value and utility for others. "I do research in order to improve and to advance knowledge." After all, "you never know how it can help somebody else."

Fifth, scholars want to comply with the institutional mandate that they conduct research. As the managers reiterated, it is "one of the strongest pillars of the university's mandate." Indeed, "it is an institutional requirement that they do research and publish."

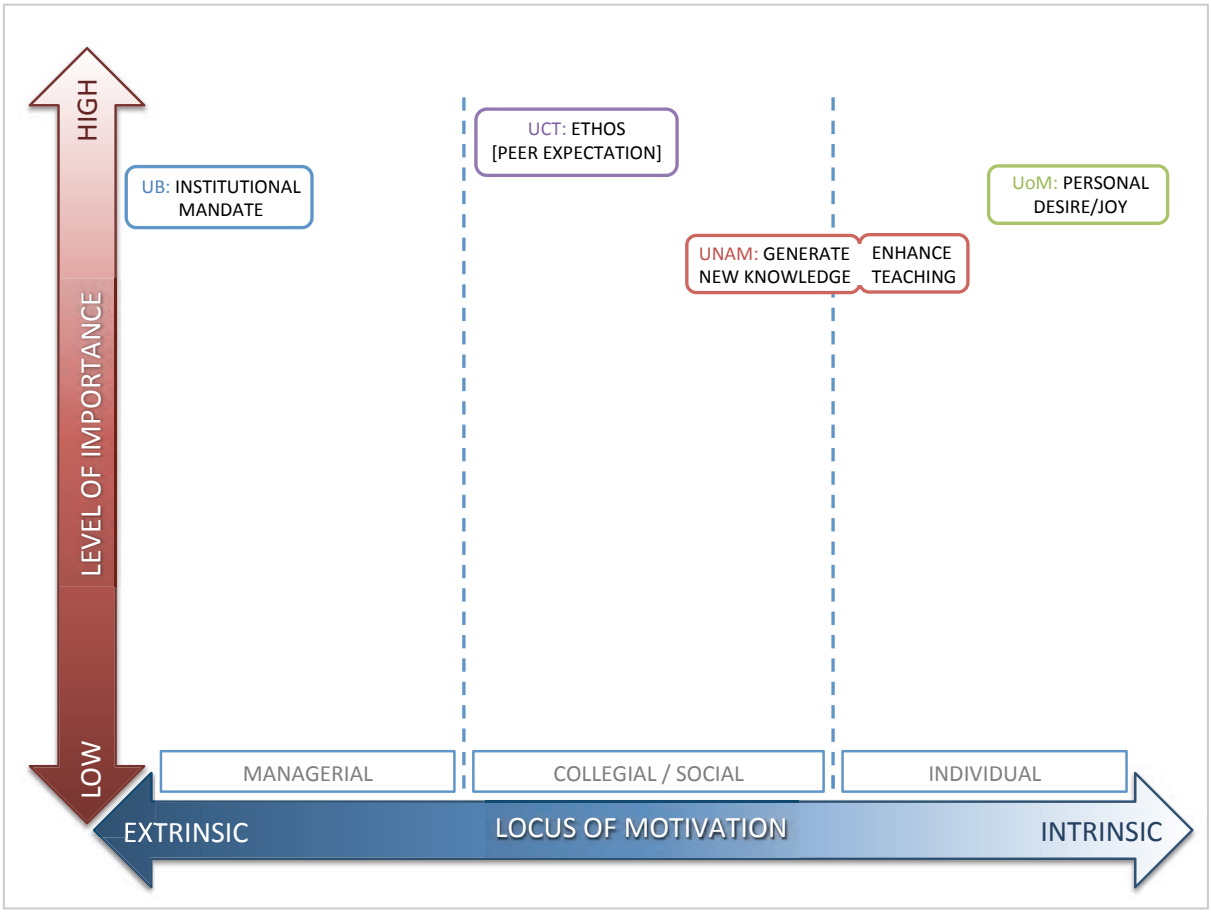
Sixth, Many FHSS scholars seek the indirect financial incentives that research offers, usually in the form of conference and travel funds. It offers them an opportunity to disseminate their work prior to publication, get feedback from their peers and travel outside of Namibia.

Lastly, scholars are motivated by their job description – a highly extrinsic factor, but a crucial contractual agreement between them and the university.

If we compare UNAM's research values profile to other Southern African universities, it becomes clear how unique it is. Figure 5.3 show the top motivating factors for research at UB, UCT, UoM and UNAM (in the faculties we profiled). At UB, the institutional mandate is the primary research motivator. It is a highly extrinsic managerial value. At UCT, peer expectation predominates, as the production of research is seen as part of the social ethos. It is a mixed, but extrinsically leaning, collegial value. At UoM, personal desire drives research production. It is a highly intrinsic, individual value. And at UNAM, the desire to generate new knowledge and enhance teaching are the two key principles driving research in the still largely teaching-focused university. It is an intrinsically leaning social and individual value.

This comparison shows that, even though these universities share a number of similarities in terms of geography, history and mission, their differences are sufficient enough to create significant diversity in how their scholars respond to the research endeavour.

Figure 5.3 The main values motivating research at UB FoH, UCT Comm, UNAM FHSS and UoM FoS



Open access

As part of our values research, we also tried to gauge UNAM academics' feelings about open access principles, thus we asked them to indicate their level of agreement with the statement "African scholarship should be freely available on the web." Of the responses given, 69% agreed strongly, 19% agreed, 4% disagreed and 8% said they were not sure. These numbers suggest a very strong level of support for open access ethics in the FHSS.

However, this expression of support is more abstract than concrete in an environment where the level of research production is relatively low and the platforms for disseminating that research locally are minimal (and not OA). For the most part, UNAM FHSS scholars do not go out of their way to ensure that their own publications are disseminated in an OA fashion, even though they agree with the sentiments of the OA ethic. But they understand how the general OA premise would greatly benefit their own research efforts – allowing them to access materials freely from the internet – and would increase the visibility of their own research. However, in an ad hoc research

environment, scholars are more apt to take advantage of whatever communication channels are available to them – such as the faculty's own journal – regardless of whether it is OA or not. For the moment, their actions suggest that it is impractical to insist on communicating their own work in an OA fashion, though it is their preference.

Research and dissemination cycle

Having established the faculty's demographics and motivations for conducting research, we can now explore the scholars' research production and dissemination practices. To help us understand them, we consulted a number of other scholarly communication models (Björk 2007; Garvey & Griffith 1972; Houghton *et al.* 2009; Hurd 2000; Sondergaard, Andersen & Hjorland 2003; UNISIST 1971), many of which had been theorised prior to the revolution in online digital communication, the mainstreaming of open access ethics and the proliferation of Web 2.0 technologies. But because global scholarly communication norms have been evolving so rapidly over the last few years, we decided to utilise Czerniewicz's (2013) research and communication cycle model because it incorporated an understanding of these important developments.

Czerniewicz (2013) compares the "traditional" (closed, scholar-to-scholar) research cycle to the digitally mediated, open access model that is shaping the current global scholarly communication landscape. Both are based around the same four core elements – conceptualisation, data collection and analysis, articulation of findings, and translation and engagement – and both include similar types of intellectual inputs (literature reviews, conceptual frameworks, etc.) and research outputs (books, journal articles, etc.). But the key difference is that, in the new model, scholars are able to communicate elements of their research during every step of the research cycle through various digital platforms, from the conception phase onwards. They no longer have to wait until every facet of the project has been completed before they start sharing their thoughts, processes and findings through various online mechanisms (blog posts, tweets, comments, etc.).

The key virtue of the Czerniewicz model is that it views scholarly research as occurring along a cyclical, rather than a linear, path, as so much of scholarly work involves retracing one's own steps through prior research data. Scholars revisit their materials and spin off new outputs, travelling around the research and dissemination cycle multiple times before moving to new projects and cycles. It also has the virtue of presenting contemporary dissemination activity as "radiant", pushing scholarly objects outward towards multiple audiences (scholars, students, industry, civil society) at each point along the cycle. This updated understanding of the research and dissemination cycle allows us to assess UNAM activities from a unique vantage point.

Figure 5.4 Traditional research and communication cycle (Czerniewicz 2013 – CC-BY-SA)

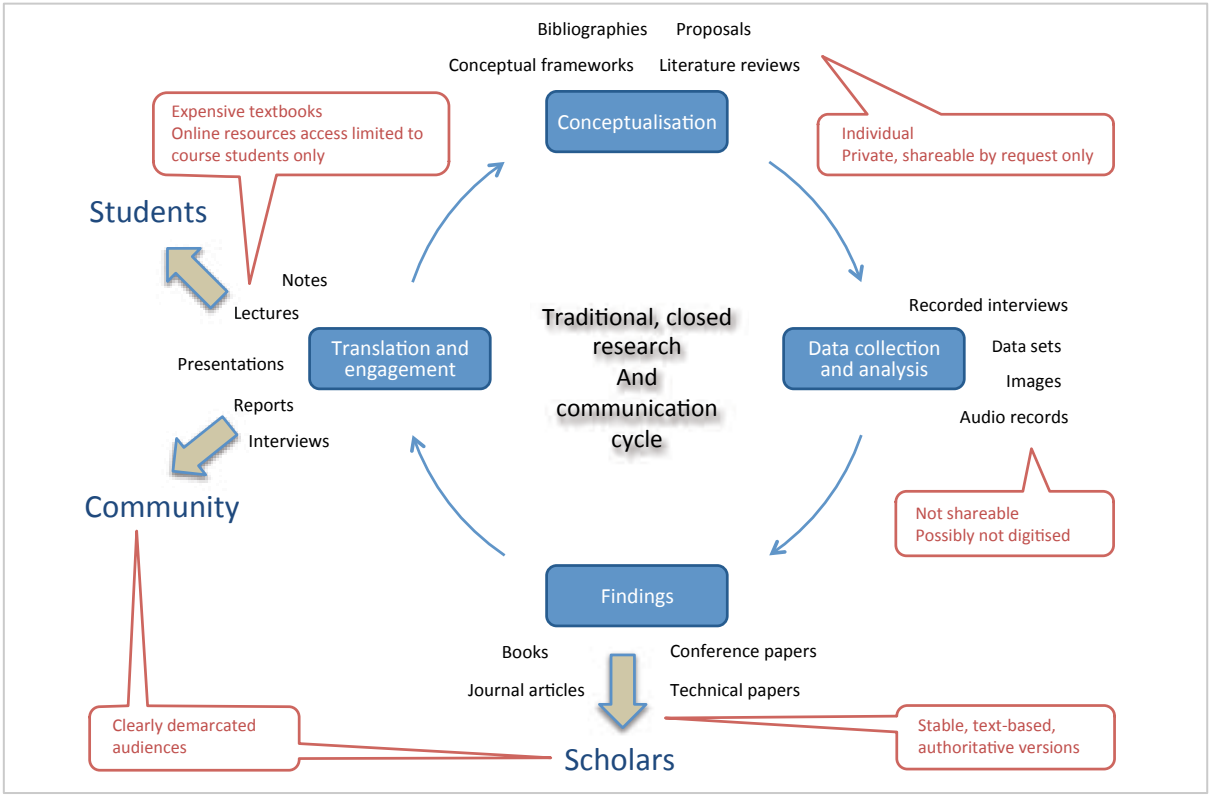
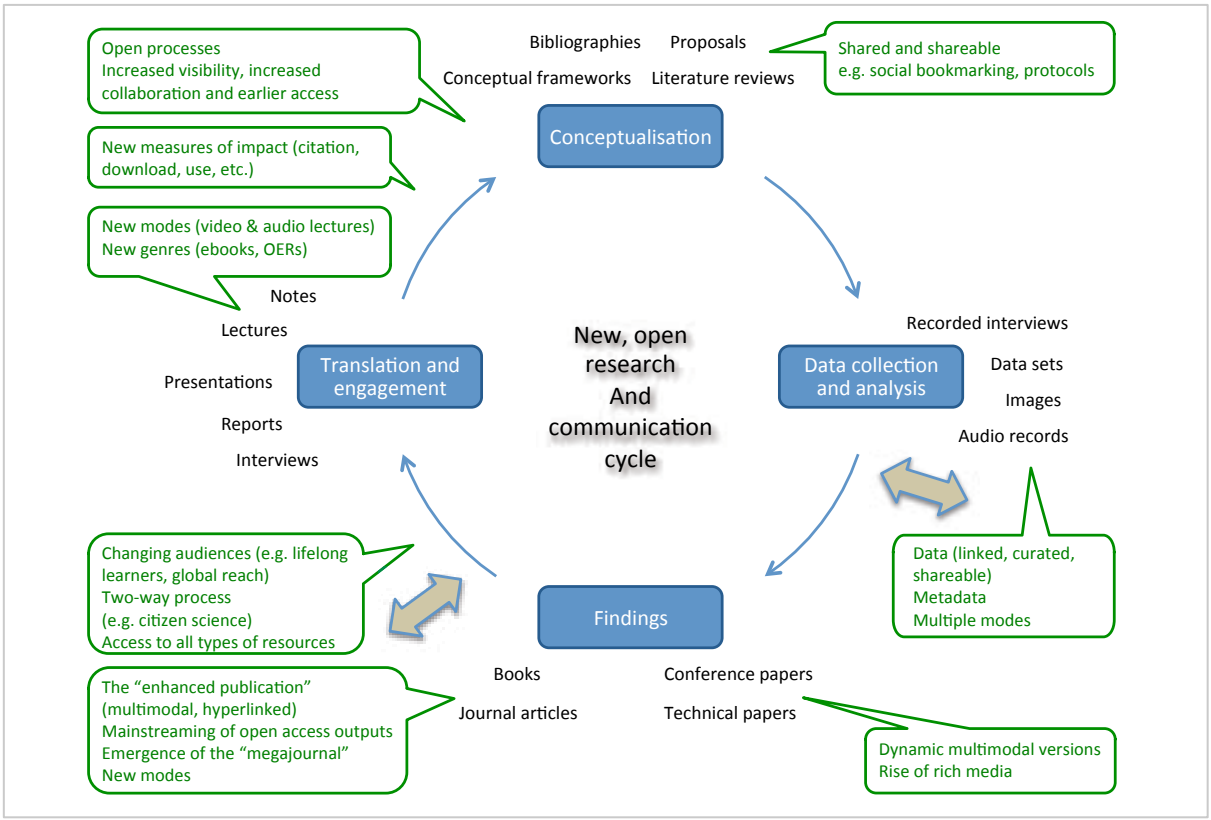


Figure 5.5 New research and communication cycle (Czerniewicz 2013 – CC-BY-SA)



Conceptualisation

During the first step of the research and communication cycle, scholars conceptualise the issue that they will explore through their proposed research. This process entails not only serious intellectual work (thinking through the various aspects of a potential research project and imagining possible processes, problems and outcomes) but also important planning work (ensuring the plan is feasible and worthwhile from a theoretical, practical and financial point of view).

As part of the intellectual process, this involves engaging with the relevant secondary literature to establish whether a new project would have analytical value and make a contribution to the field. Such engagement not only ensures that one's research does not duplicate previous research, but it is generative of new ideas in itself, usually offering new dimensions to a research concept.

As part of the planning process, this not only involves determining where the research should take place (lab, in the field, etc.) and who should be invited to collaborate in the process, but it also involves determining how much funding is required to conduct it and which funders should be engaged to obtain such funding (if necessary).

For the purposes of this discussion, we will focus less on the creative processes that UNAM FHSS scholars engage in during their conceptualisation activities and focus rather on the practical elements of their research and communication practices. These relate to scholars' use of print and electronic materials, their online search behaviour and their utilisation of various funding opportunities.

Print and electronic materials usage

As part of our focus on the research production and dissemination cycle, we explored academics' access to print and digital materials and their online search behaviour.

With educational and research materials disseminated in both print and digital formats, UNAM FHSS scholars continue to rely on both. When asked to rate the importance of certain print materials to their research, they rated international journals at the top (77% "most important"), followed by local journal articles (70%), international books (70%), national books (67%), conference papers (50%) and working papers (40%).

This slight bias toward international print sources is probably best explained through demographics and relative levels of production: the amount of "international" scholarship available is enormous compared to the relatively small amount of "national" scholarship available from Namibia, a country of just under two million people. Though most of the national literature will be highly relevant for local issues (as is also attested to by the high rates of national print use), that won't be greater than the cumulative amount of materials generated elsewhere that are also relevant. (Some scholars also suggest that the "international" category is more prestigious than the local, national one, which may also raise those materials' sense of importance, though this is not likely to be the decisive factor when it comes to uptake.)

The same holds true for electronic materials. International journal articles (64% "often") are the highest accessed e-category by far, with local journal articles (40%) a distant second.

Search behaviour

UNAM FHSS scholars say that they use academic databases most often (72%) for finding e-content. This is followed by searching through institutional repositories (58%), Google Scholar (54%) and discipline-specific repositories (53%). This is a common pattern of usage in institutions that do not subscribe to large numbers of journals, but rely on package subscriptions with a few big publishing firms. Thus, unlike at UCT where scholars use Google Scholar more often and are reasonably confident of being able to download whatever materials are listed, UNAM scholars have to rely on databases where they know that the journals they are searching through can be accessed through the university's subscription service. This makes the promiscuous search results of Google Scholar less interesting, as it is likely to include numerous links to articles that they cannot download without paying a fee.

There were somewhat varied responses around search behaviour and accessibility. One academic complained about not being able to log in from home and having to use a dial-up connection. Another said there were no difficulties, that everything was available and that download speeds were fine.

Another added: "You cannot complain that you don't have access to the right information … Even if an article is not freely available online, the power of the interlibrary loan service is there for them to acquire those for you and get it to you. It shouldn't be a problem though I have the personal feeling that it's underutilised or that a lot of people are not aware or they don't like using it or they maybe want someone else to search databases on their behalf."

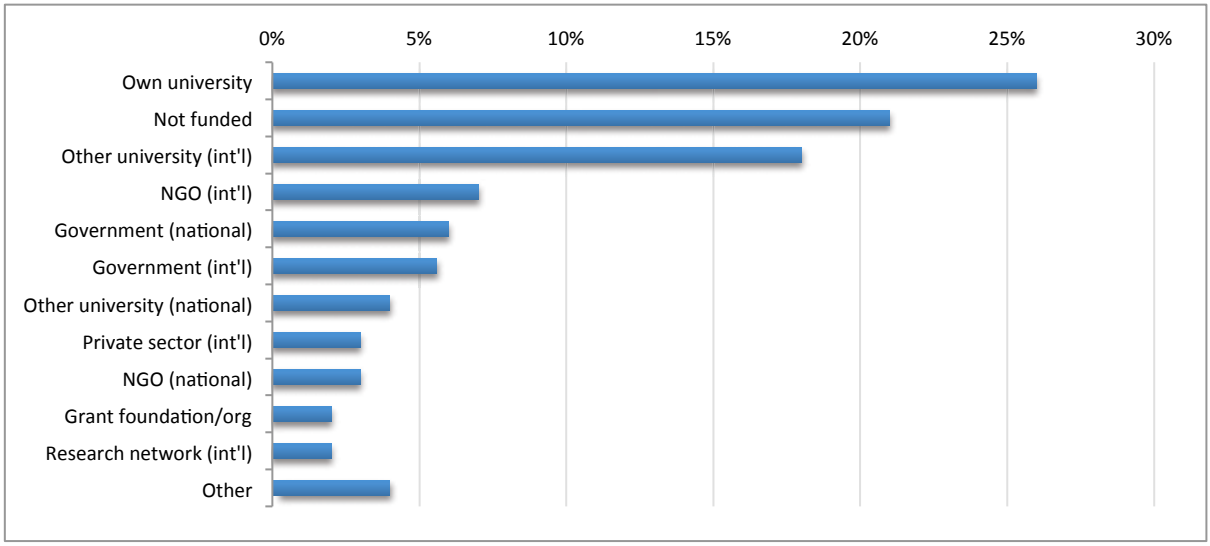
Finally, one academic said she was still very old-fashioned: "I don't search online much; I go to the library and I want to smell the books. I'm a little bit allergic to the internet. I don't really use it and find it extremely time-consuming. I find the most recent and most valuable articles are not necessarily online."

Funding sources

During the conceptualisation phase, most FHSS scholars must consider seeking funding for their new projects. Whether they obtain it, and by whom, has a significant impact on how they end up conceiving of their research, how they conduct it and how they disseminate their findings.

According to our survey respondents, the majority of UNAM FHSS projects in which respondents participated over the last two years were funded by UNAM (26%), "not funded" (21%), other international universities (18%) or international NGOs (7%). The role of other funders was less substantial (Figure 5.6). This, of course, reveals nothing about the size of the financial contributions made by each category, but they give a sense of the most likely sources of funding for FHSS research. It also shows that the university provides a solid base of support for FHSS research activity. Though some complain that the university does not have enough for large research projects, they acknowledge that the university's research fund remains the first choice for many of their projects, especially if they are conceived and run at the university.

Figure 5.6 Sources of funding for UNAM FHSS respondents' research projects over the past two years



Academics wishing to apply for funds through UNAM can do so from their own faculty research and publications committee or from a central university research fund. The amounts are not capped; small-scale projects can get around N$20,000, but bigger innovative projects can get substantially more. One said:

> *I have only applied once, but then I had to withdraw as I was too busy finishing my PhD. I want to say we cannot complain. They [university] send us out procedures of how to apply for funding either to engage in projects in your own department with junior staff members so there is a transfer of skills, or to publish outside or to attend international conferences. So it's not that the finding is not there. It is there and the support is there.*

More than a fifth of research projects over the past two years were also unfunded. This could mean that funding was either unnecessary for conducting the research or that the project was based on research that had already taken place. These would result in articles, book chapters or conference papers deriving from an established data set and thus requiring no new funding. It could also mean that the scholars paid money out of their own pockets to conduct the research.

A number of academics also sourced funds for applied projects through consultancy research, many of which were "development-orientated" and in line with the government's Vision 2030.

Data collection and analysis

The second phase of the research and communication cycle entails data collection and analysis. It also opens up opportunities for sharing preliminary findings and data publicly, prior to formal publication. For FHSS scholars, this may involve interviews or surveys, followed by analysis. It would also entail some level of engagement with tools and technologies that help process that data into results that can be analysed.

For the purposes of this discussion, we will focus less on the actual research processes that UNAM FHSS scholars engage in during their data collection activities and focus rather on the tools and technologies that mediate them. We will also discuss whether FHSS scholars utilise this time to share research information prior to publication or whether they prefer to withhold such knowledge until after it has been formally vetted.

Tools and technologies

Unlike their colleagues in the sciences, FHSS scholars do not require much specialised technology beyond what the university should normally provide to conduct their research. They do not require laboratories or sensitive equipment, though they may require access to certain expensive computer programs that are not on the institution-wide system. For the most part, they can make do with computers, broadband internet, scanners, photocopiers, digital recorders, etc. However, this does not mean that they do not still face technological challenges.

While UNAM is relatively well provisioned in terms of mechanical technology, it is only now developing the tools that could optimise scholarly communication, such as an institutional repository (IR) and a scholarly e-profiling platform. These will become valuable for raising the visibility of UNAM research, especially once an institutionally cohesive scholarly communication strategy is determined. The university is currently in the process of developing both the technology and the strategy, as is discussed in the Chapter 6.

Though most FHSS academics have accommodated themselves to the particular opportunities and constraints that their tools and technologies offer in terms of scholarly communication, it is this node in the activity system that is often seen as the most appropriate point of intervention, if only because it is easier to insert a mechanical technology into a situation than revise its rules, shift its norms, reassess its aims or change its division of labour. Thus this facet of the activity system cannot be taken for granted.

Circulation prior to publication

A majority (66%) of UNAM FHSS respondents say that they sometimes or often circulate their drafts, pre-prints, working papers, or datasets prior to publication, mostly by distributing them to fellow project members (39% “often”) or incorporating them into their teaching (32%). They also, though with much less frequency, share such pre-publications with their colleagues at the university, as well as wider academic networks, though they almost never circulate these materials to the general public or the government. This suggests that scholars circulate their work in a functional and narrow sense, either to the limited members of their project group, or to the students that they interact with multiple times per week in class. This is not an image of “the globally networked scholar” who circulates drafts widely to broad audiences, but more the “personally networked scholar” who shares with those who matter for the project, or who happen to share time with him/her on a regular basis.

One of the reasons why they do not share more at the university level is a lack of fora to do so. Many seminar series have faltered in the past due to heavy teaching commitments by the staff, thus scholars usually prefer to share their work at conferences.

However, when asked whether they have access to their colleagues' research outputs, a majority (74%) of scholars say "yes", with the faculty journal being the top reason (59%) followed by personal contact (53%). This suggests that personal contact remains the most important element of collegial sharing and communication, while the faculty journal is a crucial element of scholarly communication within the faculty as well.

Articulation of findings

The third phase of the research and communication cycle entails scholars' presentation of findings to other scholars. This usually involves the writing and publication of peer-reviewed journal articles, book chapters, books and conference papers (an output type that can straddle the pre- and post-publication line). It is the time when scholars share their research findings with their peers through formal communication mechanisms. For many scholars – and university reward and incentive structures – it marks the imagined culmination of the scholarly research and dissemination process because academics are assessed by colleagues and managers (for promotion) according to the quantity and quality of these outputs.

For the purposes of this discussion, we will focus less on the constitution of those findings or the various "impacts" that they may have had on their respective fields and focus rather on the output types that they produce, their online dissemination activities and the composition of their research and dissemination networks. These form crucial elements in the third phase of the cycle.

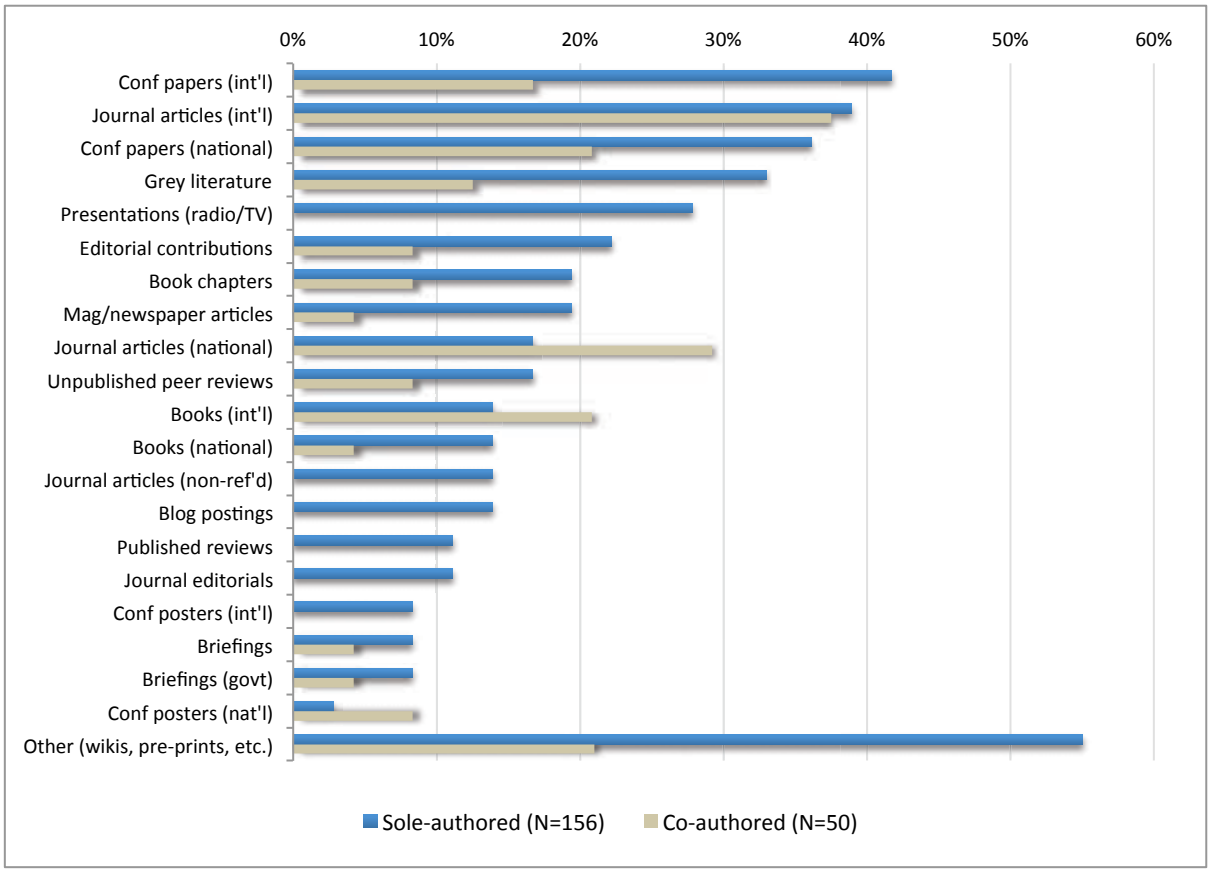
Output types

Of the 206 outputs that our UNAM FHSS survey respondents reported producing over the past two years, 156 were sole-authored and 50 were co-authored collaborative pieces (a 3:1 ratio). This is a typical ratio for humanities and social sciences work where individual research activity remains the norm (though there is a growing emphasis on collaboration at the university now).[93] This contrasts with the high co-authored proportions from the UoM Faculty of Science (1:4), revealing the importance of disciplinary norms in shaping scholarly authorship.

[93] Regarding the impetus for collaboration, one manager shared, "We emphasise collaboration within the university itself, between the researchers within the centre and with the varied faculties at the university. We emphasise also collaboration with the public institutions and private institutions in the country." Moreover, collaboration offers a great opportunity for senior scholars to mentor junior scholars and graduate students, as another manager revealed, "I just happen to like [collaboration], rather than working in isolation. And apart from that, especially if you're working, for example, with somebody who just got his masters, you're also giving some skills to this person. And it also helps because – let's say a department has only a certain budget – if you work as a team, then you use all that money as a team rather as an individual person."

Of the 156 sole-authored outputs listed by the 50 survey respondents, international conference papers were the top output (42%), followed by international journal articles (39%), national conference papers (36%), grey literature (33%) and radio/TV presentations (28%). Interestingly, though we know that the FHSS journal is an important publishing outlet for many of the staff, it (along with other national journals) comprised only 16.7% of the cases listed. However, that may simply be due to the fact that scholars must publish in a variety of outlets, not just their home journal.

Figure 5.7 UNAM FHSS respondents' production of research over the past two years (percentage of outputs)



The fact that international conferences rate higher than national conferences is probably just a function of the fact that there are fewer conferencing opportunities in Namibia than elsewhere. The sheer diversity of outputs produced (even if in relatively small numbers) reveals the complex engagement UNAM scholars seem to have with their work and their various audiences.

Of the 50 co-authored cases, the majority were international journal articles (38%), national journal articles (29%), international books (20%), national conference papers (20%) and international conference papers (17%). Thus the rate of international journal article production was basically the same whether being sole authored or co-authored (38%). But the drop in international conference papers to only 17% for co-authored pieces might be explained by the fact that it is more expensive for two people to travel internationally and deliver a paper, or because scholars use other methods to get feedback on group research.

The faculty journal had a very high profile amongst people interviewed. Most targeted it as a platform to publish in, and were very proud when they had published and were waiting to hear whether abstracts had been accepted for the second issue. For staff members who are relatively new to academic publishing, this offered a safe space to test out the quality of their work. "It has a refereeing process and now people know that there is a chance to bring our knowledge about Namibia to journals, which otherwise would be almost … it's a small country, not many people know about little Namibia, the corner there. We are online theoretically but we do need to do the work to make it more visible."

Another academic said:

> *We now have the faculty journal. I think I played quite a big part in making it happen. I'm just happy in my heart that it did eventually come about, because I really fought for it. And really, I'm very happy that we succeeded. You know, the dean then actually said, 'No, it must be a faculty thing', and I'm actually glad because that also gives a wider range of articles and I've actually sent the call for papers to my colleagues in the rest of Africa. So hopefully they will also make use of that. We are hoping to get it on EBSCO, so that it is then available more widely. But I don't think it's happened yet.*

The faculty conference was also noted as an important forum for disseminating work:

> *To substitute for the fact that we will never be able to send the majority of our lecturers out [to conferences], we have our annual faculty research conference. This is done annually so everybody can plan for it and we have had it for four years running now. So we are growing and we are the envy of the university. We have an organising committee and good papers which are captured in our journal.*

Scholars also discussed the challenges associated with publishing research findings from consultancies: "Academics can't get publications, well, they can, but usually the [commissioning agency] wants those results to be confidential to their own organisation because it's research that they predetermined, the objectives were predetermined, the sample sizes were predetermined and everything was fixed …. So they restrict the information, it becomes proprietary."

Another academic took a broader, more expansive approach to the question of research dissemination and how it should be delivered through different types of outputs:

> *Many people would say that output should be in the form of tangible research articles, but for me, output is also something in terms of the learning. I am trying to work on tangible outputs, but I've also realised that I've gained so much in the process. The podcast that I worked on was about experiences in online facilitation and that went to an international conference. I have my podcasts. When I have to put my box together with all my outputs, where do I put my podcasts?… I don't know whether your team came up with the idea of calling it scholarly communications, but to be very honest, I see this is outside the box thinking because if you talk to a person about research all of us think*

that it should be something in a journal or a published paper somewhere. So we are missing out on a lot of valuable things that we do, that we don't have the opportunity to share because they are not necessarily research, or we think they are not research.

Online dissemination activities

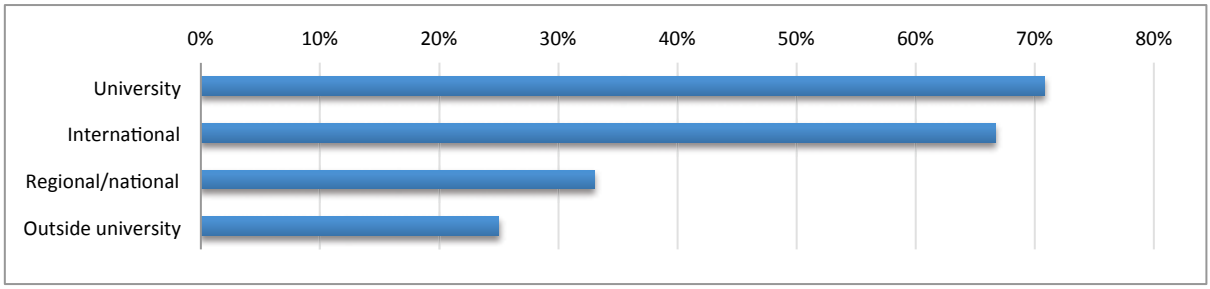
With the limited time and opportunities for direct engagement with different audiences, scholars are able to get around these constraints by simply making their research available online in some fashion, allowing audiences of all types (intended and unanticipated) to access it. When asked whether their research outputs were available on the internet to the general public, 25% of UNAM FHSS survey respondents said that "a lot" were available, 22% said "some of them" were available, 18% said that "a very small selection" of them were online and 35% said that "none" were available online. This means that a majority (53%) have either none or very little of their work available online to the general public, a reality that contrasts with the faculty's otherwise positive sentiments about open access dissemination.

However, these responses need to be put into context. First, a number of the teaching-oriented FHSS scholars have not produced research outputs yet, thus they would likely not even have outputs to make available yet. Second, most of the journal articles and conference papers that they have produced have been disseminated through traditional subscription or closed communication models. Third, many scholars suggest that they could make some efforts to get their outputs online free to the public but that they do not have the time to do so. Essentially, they're saying that, considering all of the constraints on their time and capacity, they lack the support needed to make their work more visible online.

Research and dissemination networks

To the question, "Do you feel part of a broader research network or community of scholars?", 50% of FHSS survey respondents say "yes" and 50% say "no". This 50% affirmative response reveals a comparatively low sense of belonging, lower than the respondents we surveyed at UB (67%), UoM (72%) and UCT (80%). This relatively low response rate is explained primarily by the fact that many of the staff members do not see themselves as researchers, but rather as teachers who are more invested in the futures of their students than in their own research networks.

Figure 5.8 Location of research networks for UNAM FHSS respondents



But of those 50% who feel part of a broader community of scholars, the highest number say it is with those at the university (71%) compared to an international network (67%), a regional network (33%) or people outside of the university system (25%). This is different from the other universities we surveyed where most respondents said their networks were international as opposed to institutional. In this case, the relatively high institutional response reveals the collegial sensibility that the FHSS leadership has sought to instil in the faculty through various seminars, the annual faculty research conferences and the collaborative running of the faculty journal. As members of a university where the research culture is still nascent, these locally collaborative efforts have created more meaningful connections within the faculty than the opportunities beyond it.

Some forms of networking were through partnership projects that were "aid-linked" and were teaching and training related. An example of this was a consortium around training masters students in language and literacy, funded by the Norwegian Agency for Development Cooperation.

Translation and engagement

The fourth and final phase of the research and communication cycle entails translation and engagement. This is the process of sharing one's research beyond the academic community – with students, policymakers, community leaders, industry personnel, etc. – in an accessible language and format.

This work is often unacknowledged in university reward and incentive structures (which focus primarily on scholar-to-scholar communication), though it provides one of the most productive and direct mechanisms for university research to impact national development imperatives. It shortens the feedback loop by which scholarly research gets into the hands of government ministers, community organisers and business entrepreneurs, all of whom may be able to use it for enhancing social welfare, growing the economy or spinning off new innovations.

For the purposes of this discussion, we will focus on the extent to which UNAM FHSS scholars utilise free Web 2.0 technologies to share their research and enhance their scholarly visibility, and then discuss how they engage with broader audiences by popularising their research.

Web 2.0 sharing

There are a number of freely available Web 2.0 technologies, or "social media", that would allow UNAM scholars to overcome certain obstacles that derive from their context (such as geographical isolation from other international academics) and achieve goals that are important in a developing research environment (such as enhanced collaboration opportunities with others). However, these tools do not yet play an important part in the UNAM FHSS scholarly communication ecosystem.

We conducted a "shadows and footprints" exercise to determine FHSS scholars' engagement with Web 2.0 technologies on the internet.[94] A "shadow" is a person's passive online profile that is created without any special effort on that person's part. It is usually made up of random bits of information drawn from events (conference attendance) or organisational contributions (to an academic professional association) that is made available on different websites. It is also generated by aggregators such as Google Scholar, which create an impression of a scholar's productivity and impact based on the number of citations it can connect to a scholar's articles or books. For many academics – both in Southern Africa and the global North – the only information available about a scholar comes from the shadows they have cast on the internet through their normal activities. They have not engaged with the internet in any strategic way to determine what the public learns about them and their work (Brown 2011; CIBER 2010; RIN 2009, 2010).

In contrast, a "footprint" is the actively made profile created by a scholar on personal websites, departmental web pages, social media platforms (LinkedIn, Facebook and Twitter) and scholarly profiling sites (Academia.edu, ResearchGate and Mendeley). For many scholars internationally, this simply means giving their CVs to a university web administrator to upload onto their departmental web page. But for the more proactive, it means engaging in a concerted effort to present a coherent narrative of their research interests and activities, plus a list of (and links to) their research outputs. It may also mean a more regular form of personal communication to the public through tweets, shares and blog posts.

UNAM FHSS scholars utilise a number of popular Web 2.0 tools such as Facebook/Myspace (70%) and LinkedIn (50%)[95], but they rarely use it for academic purposes. These are utilised primarily for social purposes, though LinkedIn offers a deeper dimension for occupational profiling. As a free profiling service, LinkedIn's perceived "seriousness" makes it one of the easier Web 2.0 tools for FHSS scholars to embrace, even though they do not use it with much intensity (boasting few connections). Other social media platforms, such as Twitter, are used much less, a fact that corresponds with the globally low level of scholarly engagement with such Web 2.0 technologies (RIN 2010; Ware & Mabe 2009). Elsewhere, while scholars acknowledge the potential these social media have to enhance collaboration (Gu & Widen-Wulff 2011; Morgan, Campbell & Teleen 2012; Pearson 2010), many also see it as frivolous, lacking quality control and unnecessary for successful scholarly dissemination (RIN 2010).

This is replicated in FHSS academics' low use of scholarly networking sites, such as ResearchGate, Mendeley, Academia.edu and Google Scholar personal profiles, all of which garnered only single-digit percentage responses. Thus, at least as revealed through these various profiling services, UNAM FHSS scholars cast a very light "footprint" on the internet.

Part of the reason for this is because most scholars are using the departmental website as the space in which they profile their scholarly activity. When SCAP started its research at

[94] This research was carried out in September 2012 and thus may have changed slightly since then.
[95] The Facebook/Myspace percentage is based on self-reported use, though we could not confirm these relatively high numbers. The LinkedIn number was exactly the same for FHSS scholars' self-reported use as our own research into their use.

UNAM, there was already a solid amount of information on the UNAM FHSS website concerning the education, background and research of each scholar. Since then, the website has been redesigned to allow for a more attractive and robust presentation of personal activity, and more importantly, the faculty is spearheading a scholarly profiling effort that will tie in with the development of the IR, linking profiles with outputs directly. This will enhance the online "footprints" of these scholars considerably. Indeed, it will essentially take what was previously a "shadow" (out of scholars' control) and turn it into a "footprint" (in their control).

This is a transition that scholars are sensing needs to be made, as one noted: "I did a Google search for myself once and I was a bit annoyed because, at that stage I thought, I don't know if I want to be, you know, to have that profile. But my mind is changing a little bit now. Maybe it is important that you are a little bit exposed."

Research types

While the research and dissemination cycle provided us with a model for understanding crucial elements of the scholarly communication process in the UNAM FHSS, we also found it useful to understand how the types of research outputs that the scholars were producing were impacting their communication activities. To do this, we drew on typologies developed by Boyer (1990, 1994; Boyer Commission 1998), Etzkowitz (2004), Griffiths (2004) and Cooper (2009, 2011), settling on a framework comprised of five types of knowledge production (Griffiths 2004: 714):

1. Discovery inquiry (pure basic research)
2. Interpretive inquiry
3. Applied inquiry (pure applied research)
4. Integration research (including use-inspired basic research)
5. Critical inquiry into teaching and learning

This typology is helpful in differentiating academics' various research practices since each implies varying orientations to the four key stages of research production and dissemination (Czerniewicz 2013).

When asked how many research projects they have been engaged in over the past two years, 38% of UNAM FHSS respondents said one, 36% said two, 16% said three and 12% said more than three (while 8% said none). This splits the faculty between 72% engaged in two projects or fewer and 28% involved in three or more.

In this section, we will discuss selected research project examples drawn from in-depth interviews with FHSS scholars. These provide a look at the various types of research projects that they have carried out in the past two years while also illuminating how these "type" distinctions impact communication activity.[96]

[96] Though it is impossible to say whether our survey results on this question represent a level of research productivity – as a single project might entail as much work as multiple smaller ones – it allows for some speculation on the matter if the UNAM data is compared to other data sets. With a 72:28 ratio between scholars who have been involved with two or fewer projects vs three or more projects over the past two years, UNAM

Discovery inquiry (pure basic research)

Discovery inquiry is a type of research that is usually associated with a strong disciplinary base in the sciences (most often involving team work) and comprises the collection of empirical data in the search for "generalisable explanations or theories" (Griffiths 2004: 715–717). It is also referred to as pure basic research. While this may be occurring within the faculty, we ourselves did not encounter many academics who said that they had engaged in this type of research over the past two years, for this reason: "Everything we do or plan here is governed by Vision 2030, even our own plans at the faculty, our university plans are geared towards the implementation of this. It can act as … a sort of blinkering mechanism, but on the other hand you have a socially relevant type of research." In a young nation with a multitude of pressing social needs, it is difficult to justify doing "blue skies" research when funding and assessments are tied to social relevance.

This type of research usually leads to scholar-to-scholar outputs in the first instance. Because the questions to which the research is directed often emanate from a problem or debate within a particular disciplinary field, scholars feel most compelled to share their results with colleagues through formal publication (usually journal articles). However, if the results shed light on something of more general interest, then it could be translated for dissemination to the public through op-eds or radio/TV interviews.

Interpretive inquiry

Interpretive inquiry is a variant of discovery inquiry, more often undertaken by lone researchers in the social sciences and humanities, involving "the interpretation of phenomena rather than the search for generalisable explanations" (Griffiths 2004). This was relatively common in the faculty, as this example reveals:

> *I did my masters in literature through UNISA and my PhD through the University of Stellenbosch in South Africa. I am specialised in cognitive linguistics. I looked at first generation students at UNAM and the fact that they are not prepared. So I wanted to combine literature and cognitive linguistics. I looked at conceptual literature and how you could make people aware that we actually live through metaphors. I used African literature written in English by African authors because the context of the metaphor was so much closer to the student. I also wanted to create an awareness of and a love for reading. It was mixed-methods research, as it was partly qualitative but it also involved a quasi-experiment. I presented aspects of the PhD while I was still busy with it at conferences in Hong Kong and Pretoria. I published both of those papers. The one is in the* Namibian Educational Research Association Journal. *I also presented it at a workshop for PhD studies here and at another big conference we had in Namibia on English teaching. It was then published in those conference proceedings. I am also*

FHSS staff members have been involved in fewer projects than their colleagues in the UoM FoS (62:38 ratio), UB FoH (50:50 ratio) and UCT Commerce (32:68 ratio).

working on a book. I will discuss it with UNAM Press, but I am also exploring publishing it through an internet publisher.

In these cases, fellow scholars remain the primary audience for research results (through journal articles and conference papers), but as in the case above, if the results provide some level of interest for the public, then scholars do consider sharing it with them.

Applied inquiry (pure applied research)

Applied inquiry is research for addressing pre-specified problems, sometimes at the behest of a client. It is characteristic of vocational or applied fields such as engineering, education, social policy, health care and built environment. Research of this type often makes use of knowledge derived from discovery and interpretive inquiry and is therefore sometimes viewed as eclectic or derivative. It is also referred to as pure applied research and overlaps with consultancy research.[97]

In one example, a philanthropic organisation commissioned a study to understand whether climate change is differentially impacted by gender. An FHSS scholar (called "NZ" here) had a research assistant in Namibia who did the literature review and selected the field site. Then she travelled from Cape Town back to Namibia to do the fieldwork, which consisted of surveys, group discussions, key informant interviews and life histories. She wrote up the report in two weeks and "everyone was happy with it."

First, a set of briefings was published from it. Then she presented it at COP15 in Denmark, where the briefings were widely distributed. Shortly after that the report came out. All of these outputs were disseminated electronically.

NZ said that she still gets emails from people asking her about the work as a result of those methods of dissemination. The report made a name for her, even though she sees it as one of her easiest projects. She was also invited to prepare two-page pieces on the work for several international newsletters. "If you just Google my name, and gender, it's widely coded and referenced. And I have seen, when I went to COP17, it's like every paper written on gender and climate change referenced it."

NZ has not published academically from the work although she was given permission to do so. She feels she only really started publishing last year. Up until then: "I was just doing research reports. I didn't have a mentor. I just felt like it was qualitative and who would accept this paper? So this year, I submitted a paper to the second issue of the Faculty Journal. It's just a general one on gender, culture and climate change."

In 2011 the UNDP approached NZ to work on a similar follow-up project. This took the form of a report involving a desk review with government consultation, and which also

[97] Consultancy work is often a source of friction amongst academics and managers, "revolving around whether consultancy generates 'new knowledge' or is applying accepted ideas and principles to particular cases" (Griffiths 2004: 717; see also Mamdani 2011a). Griffiths (2004: 718) argues that "While the legitimacy of the former is widely accepted, many academics are much more suspicious of the latter within the university setting, especially if the public availability of the findings is restricted by the terms of the contract with the clients." However, "the clarification and reworking of basic concepts, the testing out of ideas and methods and the application of accepted principles to new contexts" may well "constitute valid new knowledge production of this third, applied kind."

made use of all of the data and findings from her earlier work. The project generated policy briefs. "The Minister of the Environment took most of them to the National Climate Change Fair and said she was very happy with the project. So now there are further expectations. These involve putting together a proposal for a three-year funded project to be piloted with research components attached to each objective."

As this example shows, this type of research can entail communication with other scholars, but just as often it will entail a one-to-one relationship with the contracting agency, which hopes to use the research for its own purposes. Depending on the contractor and the research insights, the results of this research can lead to broad social benefits and development or to various commercial innovations, even if the research remains proprietary.

Integration research (use-inspired basic research)

Integration research involves placing discoveries in a wider context, synthesising knowledge from both discovery inquiry and applied inquiry. It is compatible with Cooper's (2009, 2011) notion of "use-inspired basic research" (UIBR) in the Southern African context, which emphasises the primacy of basic disciplinary work, but seeing it as embedded in use-orientation (Cooper 2011).[98]

In a developing world context, this type of research is the most useful, as it creates knowledge that makes a theoretical contribution to a field (which gains scholars prestige) and it creates knowledge that can have practical application in society (which makes the research relevant for development, one of the key missions of the university).

A number of FHSS research projects achieve this aim of being of scholarly and social importance.

> *I still feel that now with Vision 2013, the National Development Plan and the university policies, research must be focused on solving some national development issues. So obviously to me as a member of staff I should be able to heed that call by the University. So obviously if I'm going out for funding that should be top of the priorities. But if there is another type of research that I'm doing, the issue of interest should also come into it. It may not necessarily be something specifically targeted to national development as such but it's something of interest.*

[98] The concept of UIBR, as discussed by Cooper (2009, 2011), is central to a positive vision of where research in Southern African universities could be directed. Contrary to the prognosis given by Gibbons *et al.* (1994) around changes in universities worldwide from mode 1 to mode 2 knowledge production, which paints a picture of an inevitable trend towards the dilution of disciplinary work in favour of research orientated to "real-world" problems addressed through trans-disciplinary and transient teams focused on particular objects, the UIBR concept portrays a renewed role for the deep disciplinary expertise of university-based scholars who take forward basic scientific work at the same time as they keep their eyes on the real-world problems to which their research may be addressed. Cooper's work provides in-depth and empirical work on university-based projects in South Africa that are managing to do this.

Critical inquiry into teaching and learning

Critical inquiry into teaching and learning is a type of reflexive research aimed at education practice that aims to improve how learning takes place. This scholarship of teaching and learning has burgeoned in the past decade in the global North, as well as in many parts of the South, including the universities in which SCAP worked.

One academic, struggling to develop research projects, developed an interest in the scholarship of teaching and learning and started working on the development of open educational resources and researching their uptake. This academic commented that a journal article on this work had focused on how resource-poor institutions can use freely or easily available tools and technologies.

This research is typically meant to be shared with other scholars and university personnel so as to re-shape their educational practices. It may have relevance beyond the academy in the basic education sector, but it is largely for the benefit of scholars so that they may reflect on their teaching techniques.

Rewards and incentives

The last element of the UNAM FHSS scholarly communication ecosystem to explore is the rewards and incentives system that, in part, guides scholars' research production and dissemination. The values analysis discussed above shows that scholars have multiple, and often quite personal, reasons for why they conduct research, but the official rewards and incentives policies represent a crucial leverage point for influencing the trajectory, quantity, quality and impact of that research.

SCAP considers the following as rewards and incentives:

- Financial remuneration, including research subsidies, patents and royalty payments, direct financial rewards such as research awards, etc. (Taylor 2003: 16)
- Increased research budgets, including conferencing budgets and travel expenditure
- Greater choice in postgraduate research supervision
- Greater choice in terms of research focus, methodology, and outputs
- Decreased teaching and administrative responsibilities (Smart 1978: 408)
- Invitation to prestigious academic societies, boards, review or policy groups
- Formal (institutionally driven) recognition from colleagues and peers (Moses 1986)

According to the UNAM research strategy (Kiangi 2005), scholars are meant to be incentivised in a number of these categories.

Financial remuneration: Income after costs from commercially viable original intellectual property (patents, tangible research products, copyrights etc.) will be divided in the following fashion: one third paid directly to the inventor(s), while two thirds are divided equally amongst the research group, faculty and university.

Increased research budget: UNAM offers a greater allocation of the university research fund to research groups[99] that publish prolifically (Kiangi 2005: 13). Research groups looking to increase their research infrastructure may, subject to approval, request that the subdivision of income that would normally be allocated to the university from contract work be instead allocated to the group (Kiangi 2005: 30).

Profits earned on contract research (research performed for external consumers) may be divided equally between the faculty, the research group involved and the university. Special dispensation for the funds allocated to the university to be redistributed to the research group may be made if the group intends that the funding be used for research infrastructure development. This may be seen as an incentive for researchers as it would increase the prestige of the group and its ability to perform further research, which facilitates future employment for individuals.

Research focus, methodology, outputs: "In order to encourage staff undertaking research, the University affirms the following principles regarding research: the individual scholars will be free to select the subject matter of their research, to seek support from any source for their work and to form their own findings and conclusions" (Kiangi 2005: 12).

Decreased teaching and administration: "For those active in research, the Research Group Leaders and Research Programme Chairpersons will need to discuss with the Head of Department to arrive at a reasonable portfolio of teaching and research commitments for an individual staff member" (Kiangi 2005: 11). Also, "the University will work to provide staff with generous sabbatical leave, and research leave to allow staff to publish results of important research outcomes that would otherwise take longer to reach publication" (Kiangi 2005: 12).

Context-specific incentive: The research strategy makes special consideration for research staff on fixed-term contracts, allowing them accelerated promotion (able to apply for promotion after one year, as opposed to the 2–3 year minimum for long-term academic staff (Kiangi 2005: 44). In addition, cognisant of the insecurity of research positions, it suggests that whenever funding allows it, a 10% premium should be added to the basic salary of a researcher to compensate for their less-secure positions (Kiangi 2005: 44).

With regard to each of these incentives, FHSS scholars say that most of them are useful in spurring greater research activity, though they do not necessarily assure that the research outputs conform to national development imperatives or get disseminated in an effective or open manner. They suggest that there is room for improvement in both the formulation and implementation of these incentives (a fact that has, in part, led to the development of a new research strategy).

[99] "Research Group" refers to the research staff gathered to perform a research undertaking. Money allocated to these groups is used for research expenses and is not divided amongst individuals as a financial bonus.

Promotion and performance points allocated for research outputs

In addition to the incentives listed above, the administration hopes to motivate scholarly research production through its various promotion and performance guidelines. According to the "Procedures and guidelines for assessing publications by academic staff at the University of Namibia" (UNAM 2011b), UNAM research is assessed on a points system that feeds into the promotion system. Points are allocated to different types of research and publication outputs. To earn promotion, staff must earn a certain number of points as required in the document. Essentially, with each promotion, scholars should show greater and greater research proficiency, productivity and impact in their fields. They must also possess the requisite advanced degree (i.e. MA or PhD) and have served a certain number of years in the current position before moving up. Table 5.1 shows the relative point values given to the different scholarly outputs that UNAM recognises.

This point system rewards a wide variety of scholarly outputs, taking into account both the desire for quantity and quality. As one would expect, it rewards scholar-to-scholar outputs, while allowing for a good deal of discretion in whether the points allocated will be in the high or low end of the range (depending on quality and perceived importance). But it also rewards alternative outputs, allocating, for instance, the same points for the publication of a teaching manual as a journal article (depending on quality). This encourages scholars to produce outputs in multiple formats for multiple audiences.

Table 5.1 UNAM point allocations for scholarly outputs

Category of publication	Range of units
Academic books (ranging from medium-sized standard academic work to highly original, substantive contribution)	3–8
Smaller books and monographs (depending on volume and academic weight)	1–4
Chapters in books	1–4
Article in refereed journal/proceedings (depending on research input, academic substance and originality)	2–4
Research report (depending on the quality of the research, sample size, depth of analyses, etc.)	1–2
Academic papers published in conference or workshop proceedings	0.5–1
Consultancy, technical and commissioned reports available for reference in local/regional libraries (depending on size, format and academic quality)	1–2
Teaching manuals and study guides (depending on size, format and academic quality)	1–4
Contributions as editor (ranging from compiler of workshop or conference proceedings to editor of academic work)	1–3
Creative work: original creative work (art, music, novel, drama, literature, computer software, electronic media, video production, etc.); depending on the nature and quality of the creativity.	1–4
Unpublished national and international conference papers and posters (in full script format) including details of conference – maximum of 2 publication points	0.5–1
Article in popular publication e.g. newspapers and magazines – these are not considered as refereed scholarly works and a maximum of 1 publication point	0.5–1
Recognition for administrative duties	4–8 (1–2 refereed articles)

For a developmentally oriented university, this points system tries to ramp up the production of traditional scholarly outputs (which builds the "academic core"), while also trying to communicate scholarly knowledge beyond the academic domain by recognising alternative outputs which are more likely to be aimed at civil society, industry and government, the very groups that can leverage their research for developmental purposes.

However, the key question to ask about the rewards and incentives structure is not just whether it results in the desired quantity and quality of research outputs, but whether it has the impact that the university and the government want. For instance, are FHSS outputs helping:

- Spur national and social development?
- Usher in a knowledge economy?
- Secure international recognition?

According to a number of scholars we interviewed, their research does some of these things, or at least it would if it were more visible and reached the right audiences.

There are three ways that UNAM scholarly communication could do both. The first is to promote one-on-one relationships between scholars and other audiences that allow for them to explore ways to leverage the research for development, financial gain, etc. This is a method UNAM encourages through its University Central Consultancy Bureau (UCCB), which connects academics with industry personnel. There is great benefit in this, at least for the potential partners involved, but it is a fairly "expensive" undertaking because it requires significant investments (in time, infrastructure, contacts, etc.) by the UCCB to achieve even a small number of lucrative connections. Even more, it is aimed almost exclusively at academia–industry relationships, but not at academia–government or academia–civil society connections that could lead to crucial policy developments or social innovation opportunities.

The second approach is to publish scholarly research in an open access fashion so that anyone with an internet connection can access and read it. This is the approach that many developed-world scholars are taking, often informed by changing government and funder policies. There are costs involved in this approach too, but they tend to be spread out within an institution. More importantly, the public benefit of open access is literally immeasurable because it is impossible to determine in advance the impact that a piece of scholarly research can have for a business, community or NGO that could never have afforded to conduct the research themselves. Also, open access allows for the "law of unintended consequences" to open up new opportunities for research, as different people utilise it in their own unforeseen ways. This is one of the reasons why SCAP encouraged UNAM to embrace OA dissemination because it offers an egalitarian, progressive and ethically appropriate method of communicating research to the nation and the world, much of which was publicly financed in the first place.

The third approach is to make sure that scholarly ideas and research results are communicated to the public in a format that is accessible to them intellectually. For instance, due to government ministers' time constraints, policy briefs are often the best format for communicating a set of ideas to them. For NGOs and community

organisations, reports are useful because they offer the evidence necessary for making informed decisions, but without them being shrouded in relatively insider academic debates. And for the public, op-eds, briefing papers, blog posts, and radio and TV interviews are often the most easy to consume formats of knowledge. This typically involves an act of "translation" from the jargon-laden academic research output into broadly accessible language.

With these points in mind, it is worth asking again whether UNAM's rewards and incentives are achieving the impact that it wants? To put the question visually (Figure 5.10): UNAM's values should inform its mission; its mission should inform its policies (rewards and incentives); and its rewards and incentives policies should yield the impact that it desires. But do the rewards and incentives actually lead to the impact that the university says it desires?

Figure 5.9 Visual representation of rewards and incentives' relationship to values, mission and impact

Our assessment of UNAM's rewards and incentives suggest that, yes, in many ways, the university's policies are in alignment in this regard, especially because it offers substantial recognition for non-traditional communication formats. However, it is misaligned in that the promotion policy focuses on rewarding scholars for publication without any regard to whether it is open or closed, disseminated to the public or not. The policy appears to trust commercial publishers to disseminate their scholars' work, failing to take into account that most of those publications will only be accessible to other scholars who have university subscriptions to the relevant journals (many of which UNAM cannot even afford). This was the case while SCAP was engaged with UNAM formally, but at the time of writing this report, UNAM has been engaged in a substantial revision of its research and communications policies (which contain explicit open access commitments), thus these may serve to inform the rewards and incentives that scholars operate under in the future.

With the above discussion in mind, SCAP asked UNAM FHSS scholars, "What incentives could increase your production and dissemination of research outputs?" They responded primarily with these answers:

- More time for research (less time teaching/administration; more support staff; term structured to allow for research)
- Training on publishing
- More funding for research
- More funding for conferences
- Personal financial rewards (salary/funds allocated to department)
- Recognition/acknowledgement through promotion
- Incentives for each publication produced
- None (because not interested in producing more research)

These responses suggest a practical understanding of what would be required to increase their research outputs: time, funding and recognition. These are the elements largely holding them back from producing more; if these were attended to by the administration, scholars might produce more.

We also asked UNAM FHSS scholars, "What incentives could increase your production and dissemination of *less-traditional* research outputs (i.e. those other than books or journal articles)?" They responded:

- Access to the latest technology (iPad/tablets)
- Time (to attend networking events; reduced teaching loads/administrative duties)
- Training on publishing
- Peer discussions in forums/media
- Support staff
- Funding/financial support (research, conferences)
- Recognition/acknowledgement of these non-conventional research outputs as equivalent to conventional research outputs
- Recognition/acknowledgement as an expert (institution/peers)
- Personal financial reward (salary/remuneration)
- Nothing (not interested in producing non-conventional outputs)

These responses are similar to those above except that they include a desire for more technology, training and capacity.

The African context

The preceding discussion of UNAM FHSS scholars' research and communication practices is underpinned by a broader set of conditions that can be called "the African context". Such a term overly reifies what is in fact a dynamic, diverse and differentiated environment, but it is a useful term for UNAM scholars who are often forced to reflect on their particular circumstances due to the comparisons that they – and outsiders – often make between academic reality in Africa and the global North (the primary reference point for international academic norms and standards).

During our research, we asked UNAM scholars, librarians and managers, "How does the African context impact UNAM research?" We did not define what the African context was, but let them define it themselves through their answers. While each person offered unique views on this subjective question, they mentioned a number of themes multiple times, providing an image of how UNAM personnel see their particular geographical, historical, cultural and demographic environment impacting their research.

Their responses tended to fall into three categories – deficits, challenges and opportunities.

First, they identified two deficits that, to them, characterised the African context of research. They focused particularly on those that were financial and material in nature. In each case, the deficit led to identifiable problems in the research and communication cycle.

One deficit that they identified was simply a lack of funding for research. This is a common complaint at African universities, though at UNAM it is relatively muted, as this scholar suggests, "government funding is there, although it's not really adequate in most cases. Most of our funding resources come from those collaborations that we have with the universities or stakeholders from outside the African continent [such as with American universities or through EU grants]. Because of this, everyone is encouraged to participate in proposal writing to try to attract funding." Thus, while many acknowledge that a larger amount of funding would be ideal, the deficit is not insurmountable and certainly not on the scale experienced by many other African universities.

Another deficit is the university's lack of access to African intellectual resources, such as books, reports and research data. As one scholar noted while arguing for more sharing of Africa's knowledge resources:

> *I went to a course in Kenya where I met 20 academics from all over Africa. [We should make our work freely available] because most of the work that I looked at there was of a really high quality but people don't access it. When I did my PhD I found out that we rely so much on literature done in developed countries and the profile of our students is so different, but if you don't describe the profile of students in [a range of different contexts] you don't have this global picture of what is going on in Africa.*

This same person said, "a comprehensive bank of collected knowledge in Africa will strengthen our voice as far as matters uniquely African are concerned." The same point was also raised by UNAM librarians who are constantly trying to source more African materials for their holdings:

> *In the African context, it's very difficult to get materials that talk about Africa. You can have access to other articles that talk about Europeans, but that's not going to be very relevant to what you're studying [here]. So I realise that most African-context materials are not accessible to us. Maybe you have to pay a certain fee [to obtain it], but open access is really something that we need to work hard on so that we can have access to those materials.*

Both of these deficits – of funding and access to African materials – often push UNAM scholars to focus on seeking Northern-derived funds and participating in Northern-based research collaborations rather than finding continental funds or materials. This leads to a series of challenges that FHSS scholars identify as shaping their work in an African context.

Second, the challenges that our respondents and interviewees listed as defining their research context revolve around the North-South academic relationship and the need for confidence within that relationship. They worry about being subsumed as junior partners, parroting Northern theories rather than developing their own. Part of this is based on the history and legacy of colonisation that many Namibians experienced, a fact that continues to haunt some scholars. This doesn't just impact relations between

Namibians and scholars from the global North, but those between black and white Namibians as well. As one scholar shared:

> *If I want to write something that is defiant from the position of the colonised, so to speak, there is no voice there in those theories for the colonised to find space there. I have problems with professors left and right, even here, because they are confining me to this idea and I'm saying, 'you're throwing my thinking out of balance here!' So, I don't know. Maybe I'm more confused than anything else.*

While this situation isn't as distressing to others, many agree with the self-criticism that "most of the theories we tend to take [from the North] without interrogating them and finding out whether they apply in our situation." Yet others believe that a more nuanced approach needs to be taken in any case:

> *Why should it be a problem to engage with theory and knowledge and methodologies from elsewhere? From what I've read, people such as Kwame Anthony Appiah have already tried to say they stand with one foot in the "Northern world" and one in Africa, where he's tried to engage with debates about philosophy and African knowledge. He himself has also come to the conclusion that to try and play off the two as if they are directly opposed to each other – as if the African world per se should be against the methodologies, the concepts, the theories of the North – is wrong. Simply because understanding of these concepts of the North may help you to get understanding in an African context. So I would rather argue for a more flexible approach, to see what other concepts have to offer us and use that, not in the strict prescriptive manner.*

While many of our respondents agree with this more open approach, they nevertheless believe that they need to produce more from a "Southern perspective" if there is going to be this kind of rich dialogue between scholars, as is envisaged in the quote above. As one scholar pointedly stated, "I think it is high time that Africa produces its own knowledge out of an African perspective, which then should be recognised by the other world, as well as being an important contribution to world science and knowledge. That means that being a scientist and a researcher in Africa, we must cherish our own background within our research endeavours."

The way to do this, scholars suggest, requires a three-fold response:

1. "What we need to do is get out there with a bit more *self-confidence* and say that what we are doing is right."
2. "We should be more aware of the importance of *locating research in Africa* and try and *promote research from an African perspective*."
3. We must "*come together in order to get a louder voice* so that they [in the North] can listen to it and be taken as a partner on the same level. Because at present they think that our universities in Africa are bush universities. We must be accepted as equal partners."

Thus, many believe that the Namibian government must take a more active role in promoting local research, creating a space of autonomy for local scholars to operate in, free of the over-determining influence of foreign funders and academics. Though some FHSS staff are cynical about the government's assessment of their research, others think a more proactive stance is required: "Maybe it's high time we start developing position papers or even policy or applied policy so that the government will start listening [and give us more research funds]."

What this discussion reveals is a faculty that is highly aware of its position within the academic world, constantly comparing, absorbing and filtering ideas from outside while trying to assert a uniquely Namibian or African voice within the conversation. This is a challenge that will not go away soon, but will likely make for a productive tension within the faculty as it continues to engage in research.

Lastly, the African context provides a number of opportunities that scholars recognise are important to their work. They mentioned the sheer intellectual and research opportunities that a newly independent country like Namibia – with a violent, yet inspirational history – offers for scholars. As one manager stated, "I would say that Namibia is virgin land as far as research is concerned in my field." Another scholar concurred, echoing the same language (a clue that this is a highly discussed topic in the faculty):

> *Many areas have not really been researched. Often I interact with students coming from abroad here and they will say that it's so difficult to find a good topic because everything has been researched to death. But here it's the other way around. Research is a fairly virgin territory. And therefore to anyone interested in research, that's very encouraging, because you can do so much.*

Many of the more active researchers in the faculty share this optimism, a sentiment that they try to share with their students and other faculty members.

Conclusion

As a faculty that has recently embarked on running its own research journal, the FHSS has shown leadership in the field of scholarly communication at UNAM. Its senior academics, in particular, have shown great interest and energy in increasing the faculty's research production, visibility and impact. As part of a young institution that is trying to move from a teaching-oriented mission to a more research-oriented one, the FHSS is trying to enhance its nascent research culture gradually so that it can make a greater contribution to national development and global scholarship. This is in line with both the government's and the administration's desire that UNAM research lead to developmentally relevant outcomes. It is also one of the reasons why the primary motivations for conducting research are to generate new knowledge and to enhance teaching.

Scholars work in a policy environment characterised by high levels of responsiveness to changing research and scholarly communication trends. The UNAM leadership, and

FHSS's in particular, have sought to engage the institution with global communication practices even as it remains true to its own locally determined development imperatives. This has meant that the administration has been relatively quick to investigate, develop and promote policies that upgrade research production and open access scholarly communication. Though few FHSS scholars go out of their way (at the moment) to assure that their own research outputs are made OA, they believe in the OA ethic, a sentiment that the administration is leveraging in its new policies.

It was in this unique context that SCAP embarked on an implementation initiative to increase the visibility of FHSS academics' research and communication opportunities, an intervention that we discuss in the following chapter.

Chapter 6.
The SCAP implementation initiative

SCAP's research design called not only for the collection of data from our various pilot sites, but the active stimulation of these sites through customised implementation initiatives (or "interventions") that sought to improve the state of scholarly communication within them. Five principal assumptions underpinned these initiatives. They would:

1. Be treated as experiments.
2. Address a challenge articulated by project participants in pilot sites and other institutional stakeholders.
3. Be publishing-oriented, addressing content profiling and dissemination through new tools and technologies.
4. Utilise open approaches (including open source software and publishing platforms) wherever possible.
5. Yield insights that could be extrapolated to the rest of the institution, developed in line with current institutional strategy, e-infrastructure, and international standards and protocols around interoperability.

SCAP scoped and fulfilled the implementation initiatives during our four site visits to the institutions. The first visit aimed to surface the contradictions in the scholarly communication ecosystem, while the latter three visits sought to create consensus around the nature of the initiative, identify stakeholders and policy frameworks, and implement the agreed-upon pilot process.

While the formulation process was participatory, the principal investigation (PI) team played a considerable role in interpreting and translating the desires of informants into a feasible intervention. This was due to two factors. First, while informants had a clear sense of institutional challenges, they were often unable to articulate desired solutions to them because they were unaware of the new technologies that might overcome these challenges. Second, the PI team also had the responsibility of protecting the funder's interests and ensuring that the implementation activity adhered to open access principles.

The Faculty of Humanities and Social Science (FHSS) served as the SCAP pilot site for implementation activity at UNAM. It also served as our main research unit concerning scholarly communication practices (as discussed in Chapter 5). We chose to work with FHSS because it was nominated by UNAM in light of the fact that the SCAP Research Coordinator was also the Dean of the Faculty. The programme had at first considered working with individual departments or research units, but this was scaled up to the faculty level in light of the small size and low research output levels of many of the departments.

However, the FHSS was ideally placed to contribute to SCAP's desire to showcase a range of outputs due to its production and existing profiling of a range of different scholarly outputs (journal articles, reports, videos, etc.). The presence of research activity focused on Namibia-specific areas of work in the Humanities, much of which entailed discourse on social and development issues unique to the country and region, was an additional motivating factor in collaborating with the faculty.

In this chapter, we will examine the process and results of our implementation initiative at UNAM. We will do so by identifying scholarly communication challenges at the university, determining the focus of our intervention, putting the initiative into action and considering what lessons were learned through this engagement.

Identifying scholarly communication challenges at UNAM

Through our early change laboratory workshops, surveys, interviews and conversations at UNAM, we aimed to establish what were the primary scholarly communication desires and challenges within the FHSS. These were to help us determine the specifics of the implementation initiative that we planned to pilot with the Faculty. During our research, we found that three challenges stood out for FHSS members: the young age of the institution, the absence of a policy regulating scholarly communications activity and the fact that a previous institutional repository installation had failed.

Age of the institution

As discussed in Chapter 3, UNAM is a relatively young institution, having only recently (September 2012) celebrated its 20th anniversary. Since its inception, its activities have largely been structured by a strong teaching mission. This sensibility was reinforced with the university's merger with the country's four teacher training colleges. The university absorbed the teaching staff of those colleges, adding even greater depth to its teaching-oriented staff complement.

However, in 2005 UNAM adopted a research strategy (Kiangi 2005) that aimed to increase the production and impact of its research. This, along with changes to the staff performance assessment and promotion review criteria (UNAM 2011b, 2011c), helped signal the institution's growing research ambitions. In 2011, it also established UNAM Press, a small but active publishing entity that serves not only the academic faculty, but writers and scholars around the world (who write about Namibian topics).

The young age of the institution means that the FHSS has a nascent research culture. It is something that is being developed gradually, though scholars acknowledge that it will

take some time to change. While none saw this an insurmountable obstacle to improving research and communication activities, they understood that such improvements would have to be made in tandem with the strengthening and maturing of the institutional research culture.

Scholarly communication policy deficits

At the time of SCAP's inception and initial engagement's with UNAM, the policy framework regulating scholarly communication activity was largely undeveloped. It had a useful research strategy, and the university acknowledged the importance of governance structures to drive and coordinate research and dissemination activity, but it had yet to formulate a policy for this activity yet. (This has since changed, as discussed in Chapter 4 and later in this chapter.)

Another area of concern for SCAP was the absence of an institutional intellectual property (IP) policy. IP is often one of the most challenging components in sharing research content openly. The absence of an IP policy at UNAM was thus problematic for any form of scholarly communication activity, especially when attempting to develop new practices that require engagement with a wide range of outputs. While the development of an institutional IP policy was not within SCAP's remit or authority, we were nevertheless committed to tracking any potential issues and offering support in addressing these issues wherever possible.

Failure of previous institutional repository

In 2006, an international repositories initiative partnered with UNAM to install an institutional repository in the library, known as the Information and Learning Resource Centre (ILRC). Overseen by the Library ICT Director at the time, it was populated with some digital objects, mostly electronic theses and dissertations, as well as back issues of the *Namibia Development Journal*.

However, because the repository was installed in isolation – without reference to the broader institutional policy environment – it essentially functioned as a static archive, never fulfilling its potential of being an institutional resource that the academic community recognised as serving the university's social mission. This resulted in limited uptake by UNAM academics as the repository's value was never demonstrated to them.

In 2009, all activity around the repository ceased with the departure of the Library ICT Director who had managed it. The server remained dormant until early 2011 when the university investigated the prospect of resurrecting it and salvaging its content. External consultants ascertained that the server had been irreparably damaged by power surges due to the absence of load balancing and disaster recovery mechanisms. All content on the server was lost.

When SCAP discussed potential implementation opportunities at UNAM, the history of this repository failure loomed large for both UNAM participants and for us. None of us wanted to revive a repository just for it to fail again. The lessons from that earlier experience had to be understood if they were to be avoided in future repository activity.

Determining a focus for SCAP implementation activity

The first change laboratory with the FHSS was hosted in June 2011 to initiate the process of mapping its scholarly communication activity system. FHSS participants identified three core areas that they would like to see addressed in a possible intervention:

1. A faculty website which could play the role of showcasing research output
2. An electronic publishing platform that could facilitate production and sharing of research outputs
3. An institutional repository (IR) for the purpose of showcasing a broad array of outputs beyond formal journal articles

Since the university had already committed to exploring the installation of an e-profiling platform – showcasing the biographies, research and teaching backgrounds of the UNAM academic staff – the development of an IR (to curate, profile and disseminate their research outputs) offered a very useful complementary tool for enhancing the university's research visibility.

Intervention

Given the desires expressed by workshop participants, the proposed intervention focused on reviving the UNAM IR for the purpose of:

- Enhancing UNAM's strategic approach to dissemination, in which publishing is regarded as a core function of the university.
- Making visible scholarly communication outputs that could address national and development issues.
- Providing UNAM academics with a platform through which they can increase their scholarly footprint and online visibility.

This would be achieved by utilising SCAP programme resources to collaboratively build a pilot institutional repository in partnership with the ILRC under the guidance of the ICT Director. It would also serve to engage UNAM managers and stakeholders in a process around interrogating the philosophical principles underpinning UNAM repository development and how it could be leveraged to address institutional objectives. In addition, it would pilot a process in the FHSS of sharing a broad range of outputs that promote the institutional reputation and address issues of national concern.

However, to assure that we did not reproduce the mistakes that lead to the previous repository failure, our implementation process comprised five phases:

1. Identification of institutional stakeholders
2. Planning and strategic document formulation
3. Technical development and hosting strategy
4. FHSS content collection
5. Policy development

Phase 1: Identification of institutional stakeholders

In order to establish a sound foundation for renewed repository development, SCAP engaged stakeholders who played a role in institutional scholarly communication. Based on a series of discussions that took place during our site visits, the SCAP PI team stimulated conversation and decision-making processes around who might be best positioned to function as the business and administrative owners for new repository infrastructure. The following stakeholders were identified:

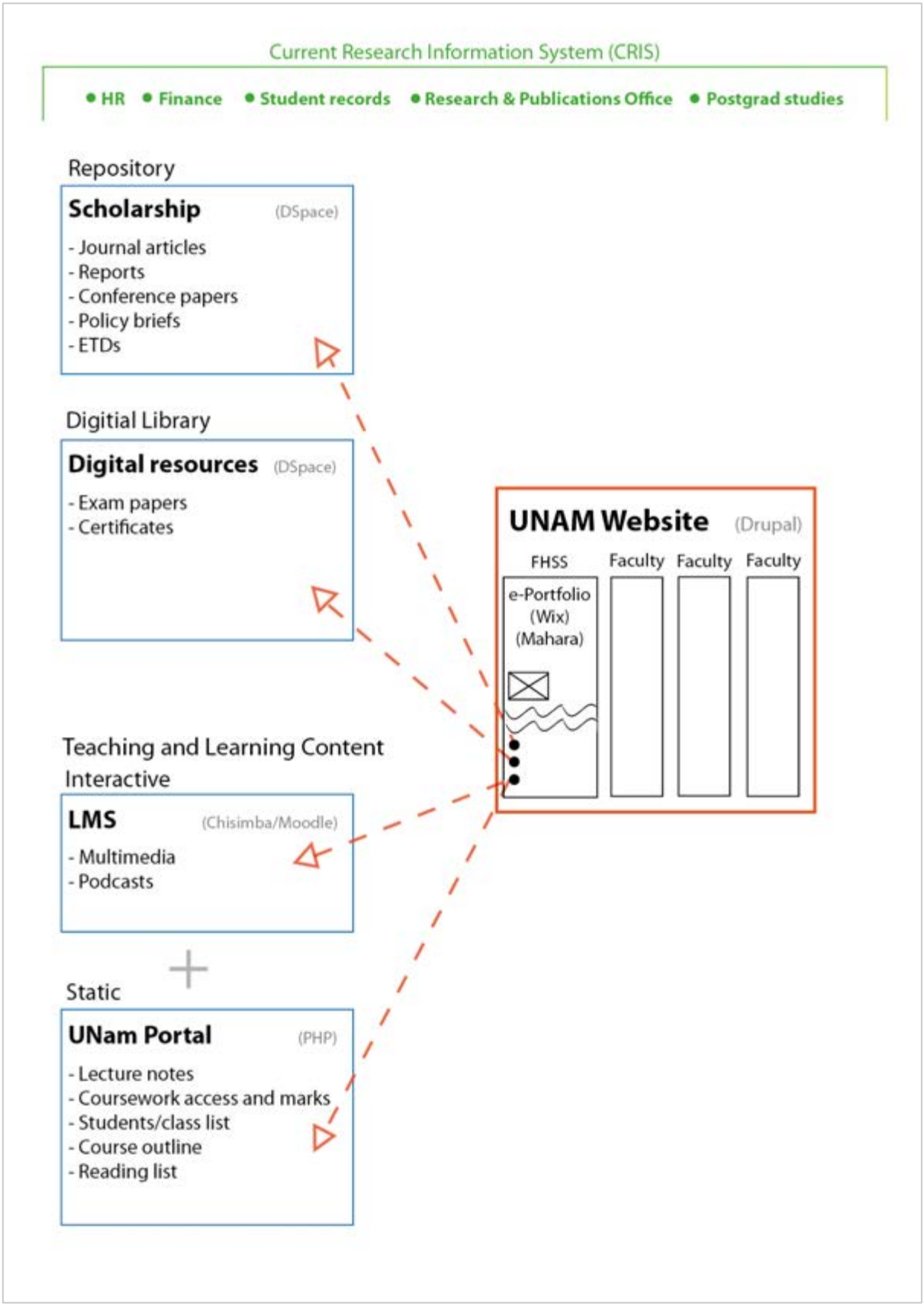
- The ILRC (library), which provided technical input and functioned as a key partner in terms of being the previous repository host. The ILRC was at this time also transforming from a predominantly undergraduate teaching and learning service to supporting the faculty research endeavour.
- The Computer Centre, the university's ICT service provider. At the time of implementation, it was embarking on a process for bringing the ILRC into campus-wide backup and redundancy processes; the partnership of this entity was therefore crucial in terms of ensuring against infrastructure vulnerability.
- UNAM Press, launched in the first year of SCAP programme activity (2011), brought additional evidence of the university's new strategic vision around growing not only its research agenda, but also in developing channels for engaging with society.
- The *Journal of Studies in the Humanities and Social Science*, the new FHSS journal launched in 2012, constituted a locus for new scholarly communication activity, fulfilling a desire that scholars develop new publishing and dissemination platforms.
- The Department of Information and Communication Studies (within FHSS), which provided input on the collection and collation of the content for the pilot initiative.
- The Research and Publications Office (RPO), the institutional body involved in the management and promotion of research.

Phase 2: Planning and strategic document formulation

Given SCAP's ambition that the repository should be considered an institution-wide asset, we engaged with stakeholders from across the university in decision-making processes around the scope and function of the repository. During our meetings, we also aimed to identify parallel initiatives where there might be operational synergies in terms of interaction with the academic community or metadata integration. Examples of these included the e-Portfolios initiative as well as a large-scale project to increase the curatorial functionality of the UNAM website.

In order to formalise the various components of repository development, the SCAP research coordinator (and dean of the FHSS) developed a "Strategic Plan on UNAM Repository Development", accompanied by a detailed overview by the SCAP repositories consultant of new required roles and responsibilities (with particular focus on the Library). These documents formed the foundation for a stakeholder meeting during the SCAP PI team's third site visit, in which repository linkages to the institutional scholarly communication activity system (and other projects or activities) were made explicit. Within this framework, the new UNAM website was viewed as the central access entity and institutional "shop front". These relationships are illustrated in Figure 6.1.

Figure 6.1 UNAM institutional repository location in the scholarly communication activity system



Inclusion of the overarching Current Research Information System (CRIS) in the discussion (and subsequent diagrammatic representation) was illustrative of the ambition for scholarly communication infrastructure and activity to fall within the framework of strategic research management and for technical systems to ideally be integrated with research management systems in the long term.

The result of these discussions was our formulation of a concept document, "Strategic research management and institutional considerations in development and sustainability of a new institutional repository at the University of Namibia", which we submitted to the UNAM administration in October 2012. It identified the following three key challenges, each of which was accompanied by a set of recommendations on how these issues might be addressed:

1. Cohesive institutional strategy and academic community interaction
2. Library capacity development
3. Technical skills shortages and ongoing customisation/development

Other factors for consideration included adherence to national and institutional IP/legal frameworks, addressing the digitisation agenda and linking to data management.

Phase 3: Technical development and hosting strategy

Once foundational scoping and strategic discussions had progressed and stakeholder partners were on board, activity moved to practical application. In the six-month period of September 2012 to February 2013, the SCAP implementation initiative focused on establishing the technical foundations of the new repository and resolving institutional ownership issues.

The ILRC systems administrator, in conjunction with the Computer Centre, undertook technical development of the repository. The systems administrator was supported in this role by a SCAP consultant who was brought on board to provide guidance on DSpace customisation, ensure that development work was in line with international best practice and open standards, and assess current redundancy mechanisms. This consultancy identified the fact that there was only one person at UNAM with the requisite systems administration expertise as a potential risk, drawing attention to the need to develop further capacity in this area and expand linkages to other institutions and online communities operating in the same technical framework.

By February 2013, installation of DSpace version 1.8.2 software was complete and running on Ubuntu 12.4 LTS server software, both being the latest versions at the time. The question of where to host the platform posed some questions as the ILRC did not appear to have the technical capacity to provide the required server capacity and technical backup expertise. In addition, there were still concerns about ILRC e-infrastructure linkages to institutional backup and redundancy mechanisms, which were still being developed. It was therefore agreed that the Computer Centre would function as the *business owner* of the technical infrastructure (taking responsibility for ongoing development, technical support, etc.), while the ILRC functioned as the *administrative owner* (taking responsibility for ongoing content deposit, systems administration, academic community liaison, etc.).

Following the DSpace installation, SCAP funds were utilised to bring a third-party service provider on board to undertake front-end development and provide batch-ingestion functionality. This work was completed by May 2013, but it was acknowledged that ongoing development and further refinement would take place as institutional activity progressed. By July 2013 the UNAM Scholarly Repository[100] contained over 500 resources, comprised of traditional and other outputs, as well as a substantial body of theses and dissertations.

Phase 4: FHSS content collection initiative

Concurrent to the technical process of building the DSpace repository, the SCAP UNAM team undertook a large-scale content collection drive in order to populate the repository with content by the time of launch. While the FHSS formed the locus of collection activity for the purpose of the SCAP pilot, the ambition was to scale this activity up to the institutional level. In line with this objective, the SCAP research coordinator facilitated a number of institutional engagements with university stakeholders (with particular focus on forums engaging fellow faculty deans) in order to extend the initiative beyond the FHSS. This resulted in positive response and by July 2013 there were content collections for all except one of the university faculties.

The FHSS content collection initiative worked on the principle of using a team of student assistants who visited academics in various university departments to explain the initiative and solicit content. This "door-to-door" approach was viewed as crucial to obtaining a response from academics. While it proved to be an efficient strategy for foundational content collection, it was acknowledged that an institutionally supported mechanism for engaging with the academic community around repository activity and content deposit would be required. The systems administrator, with the support of ILRC and FHSS staff, undertook the content deposit pilot process, though it was acknowledged that additional capacity and a more formalised system would be required for long-term scalability and sustainability.

Phase 5: Policy development

Development of an IR policy was viewed as crucial in order to articulate scope for future development, address relevant capacity challenges and ensure long-term scalability and sustainability. Activity in this area during the SCAP intervention process was driven by the SCAP research coordinator in conjunction with the SCAP UNAM Advisory Board. The Advisory Board membership overlapped to a large extent with an institutional taskforce on scholarly communication convened by the director of UNAM Press in January 2013. One of the key objectives of this taskforce was to formulate an institutional scholarly communication policy that would address, amongst other things, the institutional position on open access and the ambition to grow publishing activity within the university.

A draft Scholarly Communication Policy was presented to the UNAM senate in May 2013 and ratified in August 2013 (UNAM 2013). This was accompanied by a Research Policy

[100] UNAM Scholarly Repository, available at: http://repository.unam.na/

and a Research Ethics Policy and Guidelines for the University, also submitted to the university senate for approval in May 2013. These recent policy formulations aimed to build on the UNAM Press Policy of 2011, which identified the need for an overall scholarly communications policy "to cover the range of publications emanating from the University … different types of publication, different forms of dissemination, e.g. print and online, sales or free distribution." The UNAM Press Policy had additionally made it explicit that further policy development in this area "needs to address the University's position regarding online publication, the sharing of data, and open access to some University research."[101]

As discussed in Chapter 4, the newly formulated UNAM Scholarly Communication Policy explicitly acknowledged the contribution of the SCAP programme in its introduction: "The Scholarly Communications in Africa Project of the Faculty of Humanities and Social Sciences (2011–2013) has proved to be a valuable pilot project in this regard and has identified many of the issues to be considered in the development of a scholarly communications policy for the University" (UNAM 2013: 4).

The following policy aims were identified:

- Provide guidelines for communicating scholarly outputs
- Raise the profile of UNAM's research and enhance its impact and contribution to national development
- Establish common standards of academic writing and scholarly outputs
- Ensure quality by promoting adherence to best practices
- Make UNAM's outputs accessible in different formats to different audiences
- Establish sustainable management strategies for communicating outputs
- Strengthen the preservation and archiving of UNAM's outputs (UNAM 2013: 5–6)

This policy is noteworthy in that it takes a broad approach to open access and content sharing, accounting for content genres and processes outside of formal book and journal publications, acknowledging the importance of evolving quality assurance processes. The commitment to open access is explicit and functions on the assumption that, "as a largely public-funded institution, [UNAM] has an obligation to share its research findings and scholarly outputs with all stakeholders and the wider society" (UNAM 2013: 8). The policy identifies repository development as a key mechanism for supporting open access activity and makes explicit the roles and responsibilities for governing scholarly communication at UNAM.

The ability of UNAM to develop a repository, articulate a policy to govern it and drive the open access agenda within the short period of two years served as an indication of a university community committed to addressing scholarly communication activity and enhancing its research impact.

[101] UNAM Press Policy adopted by Senate 31 October 2011, Resolution SEN/11/2211/100

Lessons learned

The success of this implementation initiative was due, in part, to its alignment with both institutional and national strategic focus areas. University management supported the SCAP programme throughout the three-year period of engagement, with administrators, academics and other partners demonstrating interest in the programme's potential to advance the scholarly communication agenda and contribute to institutional development. Alignment with the goals of high-level stakeholders facilitated a relatively smooth institutional relationship and the UNAM research coordinator's dean status was also instrumental in bringing executive weight to the implementation initiative. These factors combined to help this initiative move beyond the pilot stage at a faculty level to a full-fledged engagement at the institutional level.

Through this process, SCAP was able to learn a number of important lessons regarding scholarly communication at UNAM.

Lesson 1: Decisions around IR ownership and governance structures need to be made in consideration of the current functioning institutional scholarly activity system and available capacity of various stakeholders. Simplistic assumptions about the repository host entity and the various roles of institutional stakeholders involved in scholarly communication and archiving (such as the library, information technology entities and university press) can overlook the historical and cultural legacy of these stakeholders and make incorrect assumptions about their capacity to engage with new forms of scholarly communication. Since OA and e-research are still relatively new phenomena for many Southern African institutions, Northern-based models for location of activity may not be appropriate in these contexts.

Lesson 2: Development of e-infrastructure needs to be accompanied by development of human capacity. In the rapidly evolving world of IT- and internet-driven communication it is important to guard against the temptation to focus investment on technology and new e-infrastructure, while neglecting human capacity development. It is important that university personnel placed in new scholarly communication roles not only receive the training required to provide new services to the academic community, but also that they have a sense of the purpose and scope of the work they are doing.

Lesson 3: Engagement of the academic community continues to be one of the greatest challenges in sustained repository development. While many FHSS academics expressed an interest in the SCAP initiative, it took considerable time and effort to get them to share their research for the repository. The lack of time, rewards or incentives for sharing their outputs hinders scholars' interest in making the effort to submit their materials to the repository. This mirrors an international phenomenon in non-mandated OA repository work, where deposit rates have often been low (Ferreira *et al.* 2008; Finch 2012; Geiseke 2011; Harnad 2009).

Lesson 4: Repositories are unlikely to function optimally if they are not integrated into institutional strategic planning structures and core IT frameworks. The failure of the previous UNAM repository can be traced, in part, to the fact that it did not extend beyond the library to the broader academic community and did not cement the protocols around ongoing functionality and sustained growth in institutional policy.

Chapter 7. Challenges, contradictions and opportunities

A key element of SCAP's research was to identify the main challenges, contradictions and opportunities in the UNAM FHSS scholarly communication ecosystem, especially as they pertain to the dissemination of digital research outputs (articles, conference papers, reports, etc.). By working with the FHSS as our pilot site, we were able to assess elements of this ecosystem as they pertain to faculty and institutional concerns. In this chapter we provide an analysis of this multilevel ecosystem that not only reflects UNAM scholars' reality, but offers critical and constructive insights for moving the discussion forward concerning the promotion of optimal scholarly communication at the university.

By "optimal" scholarly communication, we mean the dissemination of digital outputs that are open access (free to the user), visible (quickly findable on the internet), profiled and curated (typically on an IR), understandable to audiences that would most benefit from the knowledge contained within them, aligned with the mission and values of the university and the country, ambitious and original, adequately funded (by the university or another funding body), recognised by the author's colleagues and university as valuable, and of a high quality. This is an admittedly particular understanding of what constitutes optimal scholarly communication – and will hopefully add to the debate on such – but for the sake of the following discussion, this is what we mean by it.

Challenges

The challenges most impacting the UNAM FHSS's scholarly communication ecosystem are those of research culture, skills and capacity, and marginalisation. In this discussion, a "challenge" is defined as a crucial factor in the scholarly communication ecosystem that inhibits the optimal production and dissemination of research. A challenge can be a durable feature of that system (such as funding constraints) or an ephemeral one produced during a transitional phase (such as a nascent research culture), but each

stands as an obstacle to optimal scholarly communication and it is not easily remedied through the actions of any one agent (management, scholars, government personnel). Challenges are often the inadvertent by-product of a broader social, political, educational or financial concern, such as the global economic recession or the rapidly changing requirements of the information and communication technology (ICT) landscape. Typically, there is little that the institution itself can do in the short term to overcome these challenges, but through long-term strategic planning and implementation, they can certainly ameliorate them and, in some cases, turn them into opportunities.

Research culture

As would be the case at many Southern African universities, the research culture at UNAM can be best described as "nascent". There are a number of historical, demographic and structural factors impacting the research enterprise at the university.

1. UNAM is a young university, only 20 years old. The systems and traditions required to create and sustain a dynamic, strong research culture are still in the process of being established.
2. UNAM has been and remains a teaching-oriented university. Producing graduates is still the most powerful contribution that the university can make to the nation, a fact that strengthens the importance of the teaching mission.
3. UNAM recently merged with a number of teacher training colleges, absorbing staff whose academic identities are based on teaching, not research. While many of these scholars are open to adding research to their job responsibilities, others are less enthusiastic; all of them would require time to develop their research skills.
4. There is little peer pressure (collegial expectation) to produce research at UNAM. The promotion system creates an incentive for some academics, and many senior scholars encourage junior scholars to produce research, but the teaching and administrative obligations for each faculty member are such that they feel the greatest pressure to meet those requirements before attending to research.
5. FHSS scholars feel that there are not enough opportunities to share their research with colleagues, such as through seminars and colloquia. This is true within faculties and especially between them, as one scholar noted: "We don't actually have a good means of communicating between faculties or between departments within a faculty, because often you hear that people aren't aware of what other people are doing."

Thus the hallmarks of a robust research culture – defined by a high density of sharing, a pervasive sense of peer expectation and a strong affiliation between research and academic identity – have yet to be established, at least within UNAM's FHSS (though this is likely to be the case across much of the university).

One scholar suggested that there are broader social and political reasons why UNAM will also struggle to create a strong research culture: "There isn't a culture of critical discourse/debate within Namibia and this links to the broader issue of dissemination. One cannot engage in critical debate when you don't know what is out there. Moreover, engaging in critical discourse is sometimes seen as unpatriotic – a problem that is especially prevalent within the humanities/social sciences that tend to deal with real life issues."

However, this is not to say that efforts are not being made to build up a robust research culture. For instance, according to one scholar, the FHSS "is leading in this respect as far as our new journal is concerned. In our case, we're disseminating our research via the journal. That's why we created it. But most other faculties don't have a similar platform."

Thus, as one manager summed up the situation, "there is some elemental collaboration and scholarly communication in terms of public lectures and we have our annual lecture series; we've got our journal, but I'd say it's still at a formative stage." In other words, it is still in development, suggesting that the faculty and the university are going through a period of transition. This analysis doesn't reveal a static situation, but a dynamic one that will likely have a different profile over the next years.

Skills and capacity

UNAM FHSS personnel recognise that they have some skills gaps that, if bridged, would improve their research and communication activities. When asked if they would benefit from training in certain research and dissemination processes, 85% said that they would for "publishing in journals", 87% for "publishing books or monographs", 91% for "using open access platforms", and 80% for "engaging in Web 2.0 activities". While many have some familiarity with these practices, most believe that some directed instruction to streamline their efforts would be useful.

This is also true for librarians who understand that, as scholarly communication changes, their skills set to meet the new demands must also change. This requires regular training for keeping up with trends and offering the best service to the academics and students. As one librarian intimated, this also means helping train professors how to use the resources that the library has. As it becomes more of a digital research hub, scholars need to know how to use the powerful search tools in the library. But it also coincides with what librarians hope is the "professionalisation" of their occupation, through greater training and responsibility: "The majority of librarians in the country and beyond have not been trained in aspects of management" but "I would like us to become more than just traditional librarians. I would like librarians to become information managers."

During SCAP's visits to UNAM over the course of two years, it hired a consultant to carry out a number of training sessions with librarians regarding the use of DSpace (a meta-data language for profiling and curating digital objects on IRs). Her experiences with the UNAM librarians revealed the extent to which UNAM is reliant on the library staff to help promote new forms of scholarly communication, but also how unprepared they are for that role, as they were originally educated to be "traditional" librarians, dealing with paper materials and rigid classification procedures. The move to digital has upended all of the certainties of their field, requiring a new strategy and set of skills for leveraging human capacity at the university.

Marginality

Another challenge that UNAM scholars must contend with is Africa's marginality in global affairs (Mkandawire 2011), its marginality geographically, being located comparatively far from the major population centres of Eurasia and North America

(Olukoshi 2009: 17) and its marginality in the competitive world of academic knowledge production (Abrahams, Burke & Mouton 2010; ASSAF 2006; Gray 2006; Limb 2007; Tijssen 2007). While this condition shapes many aspects of African higher education, Africa's political, economic and geographic marginality are not issues that most UNAM scholars get overly concerned about, simply because none of these situations are easily changed. They will likely remain stable features of their future.

However, the relative invisibility of African scholarship globally does discourage and upset them, especially since they believe that this leads to their work being discounted. As one professor explained, "Africa is marginalised both in terms of funding and possibilities for dissemination and as academics from the humanities and social sciences, the knowledge they are contributing is not always seen as valid." This sentiment animates the response that many UNAM scholars have toward their marginalisation by the North because, "what is important is that the North accepts us as Africans and African researchers as equal partners. This is important, that they discuss and look at our theories and our research as such with the same interest as we do."

UNAM scholars, more than any others that we interviewed, feel a sense of injustice when they consider the question of their marginality. Unlike scholars from other universities we profiled, where such North-South power dynamics have shaped their research activities for years, UNAM scholars are experiencing this in a fresh way for two reasons: first, they emerged from an intense liberation process only two decades ago and remain emotionally committed to challenging inequitable social dynamics that they face, whether politically or academically; second, now that they are starting to engage more with the globally competitive world of scholarly research and dissemination, they feel insistent that they should be considered equal partners with their Northern peers in these endeavours. They have not become habituated to this state of affairs.

However, as the institution ages and scholars continue to experience this marginality, it will be interesting to see whether they accommodate themselves to this stubbornly persistent reality or whether they continue to agitate for greater recognition from their Northern colleagues. As a practical measure, the fact that they are investing in local communication channels, such as their own journal and IR, suggests that they do not plan to challenge their marginality only in verbal terms, but through meaningful action as well, by creating communication channels that promote their own perspectives.

Contradictions

While the UNAM FHSS scholarly communication ecosystem faces the challenges listed above, it is also beset by a key "contradiction", an element within the system that hinders it from operating optimally, usually in a directly oppositional manner. Unlike challenges, which are typically obstacles that emanate from broader social, political or financial contexts, contradictions emerge from within the activity system and can be remedied from within it.

The primary mechanism by which we identified contradictions in the UNAM scholarly communication ecosystem was by assessing it through the CHAT triangles that we employed during our change lab workshops. This was an intensive process that allowed

SCAP and the academics to explore every node of their activity system, evaluating whether there were any misalignments ("contradictions") in it that could be addressed.

The primary contradiction we identified is likely a temporary by-product of UNAM's transition from a teaching university to a research university. In this period of flux, new tensions and stresses have been placed on the scholarly communication ecosystem, placing certain processes in opposition with each other. But this contradiction could become more permanent if it is not dealt with soon. Ideally, this contradiction would stop forming obstacles in the activity system and rather perform as a "productive tension" that leads to higher levels of research productivity, innovation and dissemination (a concept we will explore below).

In this section, we will discuss the major contradiction currently impacting UNAM's scholarly communication ecosystem: teaching and administration vs research.[102]

Teaching and administration vs research

Like most African universities, UNAM has focused on teaching undergraduate students during most of its history. That focus is now changing – or at least expanding – to include the training of graduate students and a greater emphasis on the production of research outputs by the staff. It is still early days in this process, however many staff see this transition as a fraught experience with teaching and research existing in competition and isolation from each other. They do not yet feel that both teaching and researching are equally important components of their work, but that the new research requirements have been simply piled on top of their heavy teaching schedules, placing them at odds with each other, not in tandem.

A number of academics suggested that there was an imbalance between these enterprises, with teaching remaining prioritised in reality. As one scholar noted, "the move from a teaching-focused university to a research-focused university is also part of the problem – some lecturers see themselves as glorified high school teachers. Moreover, being the only university, there is a strong national imperative to teach."

This reality is compounded by the simple fact that there are not enough staff members to handle the teaching loads: "This [reallocation of teaching time] is not happening. The major problem is that we are short-staffed. We have got this formula, teaching some 60%, research [30% and service 10%]. We are not keeping that. I think teaching is 80%, research is 20%. Something like that."

This notion of being completely defined by their teaching loads was echoed by others as well:

> *I agree that there's still really a big problem here. The university is trying to do something about it so that they can reduce the teaching load, but like he*

[102] When SCAP first started studying the UNAM FHSS ecosystem, we identified a number of other contradictions related to policy articulation vs implementation, policy deficits and open access communication, but in the course of our engagement with the university, the administration embarked on an ambitious policy-development initiative that is starting to address these contradictions. Thus we have not included those prior contradictions here because corrective measures are being taken to align the elements of the ecosystem. This is precisely what we hoped would occur.

> *said, just because of the shortage of teaching staff, you just end up teaching a lot. We are looked down upon by other academics from other universities. Every time they ask me, "how many hours a week do you teach"? I tell them and they say, "What?! It's like you are in a secondary school. This is not a university."*

Indeed, the general consensus was that their core responsibility was to teach a full load each semester while research had to be considered in light of this primary obligation. The fact that there were often staff shortages meant that this obligation would not shift soon. Yet "most of us lecturers really feel that the teaching load is just too much. It doesn't leave us enough time really to do research. Most lecturers are overloaded."

Moreover, others suggest that administrative obligations are also weighty, hindering research efforts. Indeed, UNAM was the only university we engaged where scholars self-reported spending a greater percentage of time on administrative work than research. "I think there is not only teaching here. Some of them have to do administration work, which is even more now." In fact, "there's a lot of administration that needs to be done. Most academics serve on several committees within the department."

UNAM's management is aware of this problem, with one administrator explaining that, "we might not have that luxury of having a university which we can say, per se, this is a research university. We have a mixture of both [teaching and research]."

But some suggest that, for the truly ambitious, there are ways around this contradiction. "You find that even people with a high teaching load, they still publish. You know, you come here weekends, Saturdays, Sundays, holidays, you find the same type of cars out there [in the parking lot, of the staff doing research work] …. It requires a lot of dedication …. There's a teaching load, yes, but also maybe with a little bit of determination and commitment, it's still doable." This is an important sentiment, that if scholars made certain sacrifices, they could achieve their research goals. But the key question is whether a strong research culture could ever be built on such an enormous sacrifice (of family time, weekends, holidays and so forth). It is likely unsustainable and thus only done by the most committed individuals.

This suggests that UNAM scholars currently experience the teaching and research missions as contradictory, not complementary. They understand the value of research to the teaching process and enjoy bringing their new knowledge to the classroom, but they also understand that, while the management may want to become more research-oriented in the future, the institution is still largely structured according to its long-held teaching obligations.

This dichotomy between teaching and research is not a timeless or static contradiction, but rather a temporary challenge that is the product of the institution's transition from a teaching-focused to a more research-focused university. At some point in the future, UNAM scholars will hopefully experience these dual imperatives as part of an integrated whole, not as compartmentalised features of their work lives. But in the meantime, university scholars and managers must continue to negotiate the difficult terrain of this transition period.

Opportunities

With these challenges and contradictions in mind, it is now important to consider the aspects of UNAM's scholarly communication ecosystem that are working well. The CHAT methodology allows us to do this because it not only shines a light on an ecosystem's contradictions, but also illuminates areas of alignment (thereby allowing site members to leverage them and improve the functioning of the system as a whole). This is not only strategically sensible, but also allows us to move beyond any sense of Afro-pessimism that can start to creep into a discussion about African universities' "challenges" and "contradictions". Because the fact is, UNAM is already making crucial strides in transitioning from a teaching to a research university, though the process remains fraught and incomplete, especially in the context of scholarly communication.

In this section, we will identify promising "alignments" that arise from an analysis of the UNAM FHSS activity system. We will do so by looking at the opportunities afforded by institutional culture, e-infrastructure and open access.

Institutional culture

As a young university in a young country, UNAM's developmental mission remains strong. Both scholars and managers are animated by the contribution that they feel they can make to the nation through their education work at the institution. The university administration, as well as many scholars, holds a close association with the government, keeping their developmental mission in line with national strategies and policies. As one manager noted, "not all research is determined by these ideas, but we try to align our research agendas to the National Development Programme to put the goals in the country … so in a given situation, there is a possibility that they can contribute to social development."

This alignment with the government's purposes coincides with university leaders' desires to enhance the quality of the institution according to global academic norms, resulting in a practical responsiveness to both local and international standards. As a manager explained:

> *There's a very strong feeling in the university – in the strategic objectives the university has set for itself – to serve society and to be there as part of the development of the nation, and to use academic learning, research and teaching towards the development of the society as a whole. So that's a dimension that I think universities in the First World don't have, in the North, in the same way. And as the university has developed over the past 20 years, the introduction of new faculties has really been based on what the country needs [such as law, medicine and agriculture]. So it's quite a close link between the university and the broader development needs of the country. A lot of the research is quite solution-driven. That may be different from other contexts.*

Thus while the university is gaining greater awareness of its comparative place regionally and globally (through rankings, etc.), it still assesses itself primarily by how it is contributing to national development, a very local standard of measurement.

Another key element of UNAM's institutional culture concerns the way in which senior scholars act as mentors and models of exemplary research behaviour so as to build a research culture. In a context where the research imperative is relatively new, the role of "elders" in building that culture is crucial. Many senior scholars who have active research and publication profiles in the FHSS have taken on this role quite self-consciously, while younger academics (or those newly arrived from the teachers training colleges) have sought to emulate such mentors. Often, senior scholars will try to create collaborative research opportunities with younger scholars and postgraduate students so as to provide guidance during an actual project.

What's important to note about this is that power in this arrangement is not transferred in a "top-down" fashion (as is the case in a managerial institutional culture), nor is it "lateral" or "side-to-side" (as in a collegial culture), but it is best described as "front-back", meaning that a small cohort of colleagues (who are nominally equal, but distinguished by their experience) leads a broader cohort of "followers" by example. It is these senior academics – more than administrators or peers – who are helping to build the research capacity that the university desires. This fact helps explain why more FHSS scholars feel a sense of belonging to research networks at the university itself rather than outside of it (in comparison to the other universities we profiled, where this mentoring dynamic is not so profound).

In practical ways, this leadership is demonstrated concretely not only in their running of committees at the departmental and faculty level, but their editorial work on the faculty journal and their participation in the SCAP implementation initiative. Indeed, to get other scholars to submit their alternative outputs for profiling on the new IR, the dean of the FHSS not only offered up all of his own work to the initiative, but personally secured the participation of many other senior scholars whom he believed would inspire younger scholars to follow suit. He understood the natural authority they possessed in this context where research efforts were still tentative.

This type of "developmental" institutional culture (Bergquist & Pawlak 2008) – one that is responsive to the needs of the nation and built on mentoring relationships – has great potential to enhance scholarly communication within it. With all of the policy development that is now occurring at UNAM in response to both SCAP's engagement and its own desires to leverage its capacity, the university is on its way to doing just that.

e-Infrastructure

Over the past two years, the university has made great strides in securing the e-infrastructure necessary to enhance scholarly communication. First, it has redesigned the institutional website, making it more functional, dynamic and attractive. This acts as an important signalling device to the staff that the administration is serious about upgrading its presence and visibility on the internet.

Second, it has embraced a scholarly e-portfolio initiative in which each scholar will have their own personal web page where they can profile their research interests, publications, educational background and any other information that they feel is necessary for their students or the world at large. This activity began prior to SCAP's engagement with UNAM, but because of its obvious value to the work that we were promoting, we integrated our proposals with those being developed by the scholarly profiling team. This has radically enhanced the potential of our work at UNAM and the sustainability of any visibility-enhancing measures that the university takes.

Third, the administration – through our pilot initiative with the FHSS – has established an IR that will curate, profile and disseminate scholarship produced by UNAM scholars. This does not pertain only to journal articles that they produce, but to all research outputs, including "alternative" outputs that are meant for non-academic audiences. This process is discussed in greater detail in Chapter 6, but it emerges from SCAP's implementation initiative with the FHSS, which has piloted the build-up of the IR for the rest of the institution.

What is so encouraging about this initiative is that it is based on lessons learned during a previous IR failure. A few years ago, an IR installation was established by an external agency, then run by a person in the library who had the good intention of profiling UNAM scholarship. Unfortunately, because the IR was not embedded in institutional policy and lacked certain crucial technical supports (redundancy mechanisms, power surge protectors), it was rendered inoperable over time, resulting in the loss of all of the materials stored on it. Once the librarian moved on to another position, the IR failed because it was not integrated into broader networks of responsibility.

This was a painful episode, but one that the administration decided to leverage rather than deny. Thus, when SCAP engaged with the university, the leadership was ready for the complex and difficult conversations that needed to happen before the IR could be re-established. Now the IR has been embedded in institutional policy and various safety protocols to ensure its longevity. The pilot process that the FHSS embarked on with us has produced numerous scholarly outputs for profiling on the IR, acting as a model for the other faculties at the university.

What is most encouraging about the establishment of these new e-infrastructure technologies is that the university is not simply purchasing and installing them. It is taking the time to prepare the institution for them, to ensconce them in policy provisions, to train the personnel to administer them, and promoting them to the academic community so that they will use them. This process should be replicated with all future e-infrastructure initiatives.

Open access

As we discussed in Chapter 5, UNAM FHSS scholars are largely positive about the merits of open access dissemination. They see the value OA would have not only on allowing them to gain access to more materials, but on allowing more people to access their work as well. They also understand its value for non-academics who seek developmentally relevant research for their own purposes, especially civil society, industry and

government personnel. This is a sentiment that the university is now leveraging as it promotes new research and innovation strategies.

UNAM leadership could also leverage it in how it moves forward with the future issues of all UNAM-affiliated journals, especially the FHSS journal. At the moment, the journal is not OA. It is a popular publication channel for many FHSS scholars, but because it is not online or OA, it lacks the ability to truly impact the national community.

Thus, while there are certain e-infrastructure challenges to making OA communication a reality at UNAM, it possesses both a positive sentiment toward OA and in-house publication channels that could start reaching out to the broader communities that it has identified for targeting through its own practices. The journal could produce different genres, not just articles, enhancing its appeal to multiple audiences. But they must become OA first.

Conclusion

This discussion of the challenges, contradictions and opportunities characterising the UNAM FHSS's scholarly communication ecosystem reveals an institution in transition. It is slowly trying to ramp up its research production and make the university a source of developmentally relevant research for the nation. This process is not without its difficulties, as we have seen. The biggest challenges revolve around creating a robust research culture within the institution that could regulate more consistent production of outputs; addressing skills deficits regarding scholarly communication through strategic training initiatives; dealing with Africa's marginal position in global academia; and reducing the demands that teaching and administration have on those who want to do research. Despite these challenges and contradictions, there are real opportunities for growth and development that scholars and managers can leverage, such as the university's proactive institutional culture, its e-infrastructure commitments and the positive sentiments scholars bear regarding open access dissemination.

Chapter 8.
Key findings

In seeking to answer our two research questions concerning the state of scholarly communication at four Southern African universities, and how information and communication technologies (ICTs) and open access publishing models can improve that state with appropriate institutional support, SCAP has amassed a substantial amount of data on the University of Namibia's (UNAM) research and communication practices, its policy landscape and its level of e-readiness. We have analysed that data in the previous chapters, but here we condense that analysis down into a single chapter where we present our key findings.

Before we begin, however, it is worth foregrounding a foundational assumption that we have confirmed through our research, which we now restate as a finding:

➔ *Finding 1. UNAM scholarship is comparatively marginal and invisible in the global context of academic research production.*

This coincides with the literature that shaped our initial assumption, that scholarly research from Africa is relatively marginal and invisible in the broader context of global research production. This is also true of Namibia and its flagship research institution, UNAM. With a small population, a tiny higher education sector, a modest financial base and a tertiary education system that has largely focused on teaching rather than research, Namibia struggles to achieve distinction through traditional academic indices (such as WoS-rated journal article production).

This general condition of marginality and invisibility is due to both external and internal factors. Externally, the wealth and productivity of Northern institutions (and increasingly other Southern ones in China, India and Brazil) simply dwarf the research potential of smaller countries such as Namibia, a fact that will not change soon. However, it is also influenced by internal factors which, if altered, could increase the reach, prestige and relevance of Namibia's research.

In this chapter, we will highlight the key findings from our research into UNAM's scholarly communication ecosystem, as they pertain to UNAM's research and communication practices, its policies and its infrastructure and capacity. These comprise the "internal factors" influencing the visibility of UNAM scholarship and offer points of contact for interventions that seek to improve them.

Research and communication practices

To understand the state of scholarly communication at UNAM, we focused on the research and communication practices of the Faculty of Humanities and Social Sciences (FHSS), SCAP's research and pilot site. However, the various research instruments that we used to obtain information crossed institutional and faculty levels, shedding light on each in turn. Thus some of our insights are applicable to the whole institution while others can only speak to the faculty level. We will be as explicit as possible about the scope of each finding so that readers can see the complexity of this nested ecosystem.

Values

To get a full picture of scholarly communication practices at UNAM, we started by trying to grasp academics' motivations for conducting research and publishing their findings in the first place. Based on numerous interviews, surveys, conversations and observations with members of the UNAM FHSS, we found that FHSS scholars were motivated by both extrinsic (mandates) and intrinsic factors (personal desire), but that the desire to generate new knowledge and enhance teaching were the most important.

➔ *Finding 2. The foremost reasons why UNAM FHSS scholars conduct research are to generate new knowledge and to enhance teaching.*

This makes sense for a couple of reasons. First, since UNAM has a strong teaching heritage, and because scholars continue to bear heavy teaching loads, students are a primary audience for many of the academics' research ideas. Teaching remains the primary focus of activity for many scholars; they therefore feel it is important to enhance this activity with their other work, such as research. Equally important, many FHSS scholars want to "generate new knowledge" through their research, filling "gaps" in the country's humanities and social science knowledge. They see Namibia as "virgin territory" for researchers who can explore numerous topics, often producing the first research on a topic in the country. They are excited about this fact, that their research can help form the foundation for a truly national scholarly enterprise.

This is an important finding because it is not clear whether these particular motivators can lead to sustained levels of high-quality research outputs. It sustains research production for those who are already active, but it remains an open question whether a "research culture" can develop from such a "contribution-minded" sense of motivation.

Another key finding that emerged from our values research concerned scholars' own desire for visibility. Initially, SCAP assumed that all scholars wanted their research outputs to be visible, as it accorded with our understanding of what comprised a "typical"

academic identity. However, we soon learned that not all Southern African scholars want their work to be visible.

➔ *Finding 3. Some UNAM FHSS scholars want their work to remain invisible.*

For a number of personal, social, cultural and professional reasons, some UNAM FHSS academics revealed that, though they want their research production to count toward their annual performance assessments, they would prefer that their research – or at least some portion of it – remains unseen. The reasons they give for this stem from:

- Anxieties about quality, peer judgment and community exposure (especially if they doubt the quality of their research contributions)
- A culturally informed sense of modesty (where it is considered improper to engage in "self-promotion", such as calling attention to one's own work)
- A minimalist communications strategy (where dissemination is achieved through reading a paper at a conference, or perhaps allowing a journal to publish it, but nothing further)
- Fear that others may steal their ideas/data (especially if still in gestational form).
- A teaching- rather than research-oriented approach to scholarship (which speaks to one's sense of academic identity, as a "teacher" rather than a "researcher")

While many FHSS scholars are keen to share their research with the world (as is probably true of most academics at UNAM), it is crucial to remain cognisant of the reasons that some would have for hiding their work, as a number of these rationales are likely to be relevant in marginalised, postcolonial settings where academics face significant resource and access constraints.

Research production

UNAM FHSS scholars say that they spend the majority of their time engaged in teaching-related activities (timetabling, prepping, lecturing, marking, advising, invigilating, etc.). They also say that they shoulder significant administrative duties. This is acceptable in a teaching-oriented institution, but for one that seeks to add a greater research component to its activities, it will hinder UNAM from transitioning to a more research-oriented mission.

➔ *Finding 4. Heavy teaching and administrative loads hinder research production in UNAM's FHSS.*

This is likely true of all the faculties at UNAM, not just the FHSS. In fact, this finding conforms to the image presented by other studies of African higher education, which show that scholars across the continent are burdened by similar challenges. The simple lack of time available for carrying out research has a massive impact on whether African scholars can pursue research projects, or whether they can do so with any regard for quality and consistency.

For those UNAM FHSS scholars who are able to make time for research, many claim to face funding hurdles, though most have been able to make do by tapping into university research funds, or producing outputs based on already-produced data sets (such as their own PhD dissertations), or by participating in international scholarly collaborations.

➔ *Finding 5. The majority of UNAM FHSS scholars' research is funded by the university, unfunded or funded by international universities.*

One way in which they try to overcome their funding limitations is to participate in consultancy research, an opportunity that the university encourages. Though consultancy work can often draw scholars away from their primary research interests to attend to those of their funders, it can sometimes compensate for this by allowing them a chance to engage in empirical research and contribute to a project that may have national development potential. This is especially the case in Namibia where many contract research opportunities have practical applicability. However, the major problem is that these consultancies are often bound by strict confidentiality clauses, disallowing them from publishing their results.

➔ *Finding 6. Consultancy research often offers UNAM FHSS scholars the only opportunity to do empirical research, though they are not always able to leverage it to boost their scholarly profiles through academic publication.*

Outputs

The university recognises a broad range of research outputs and gives weighted points for the production of each. UNAM's reward and incentive structure encourages scholars to create a diversity of outputs aimed at local and international audiences, as well as scholars and non-scholars. This official recognition is important because it helps shape the types of outputs that UNAM FHSS scholars produce.

➔ *Finding 7. UNAM FHSS scholars produce a wide variety of scholarly outputs due, in part, to a rewards and incentive structure that recognises multiple formats for multiple audiences.*

This enhances the likelihood that its scholars will produce "alternative outputs" (policy briefs, reports, working papers, etc.) that can reach diverse audiences that can leverage them for developmental purposes. This is a valuable feature of the UNAM scholarly communication ecosystem. However, it is also true that the production of some of these outputs – which are often interpretive and derivative – is less effective at building up a strong research culture in comparison to the production of empirical research outputs. Thus UNAM is at a critical juncture as it navigates the twin imperatives of strengthening its research capacity while also contributing to national development through accessible research activity. Both are ideally achieved in tandem.

Communication

While the UNAM FHSS staff members gradually ramp up their research production to meet the standards required of a "research university", they are far less responsive to the changing communication opportunities that new ICTs offer for disseminating their work. For the most part, they confine their communication activities to traditional modes, such as reading their papers at regional conferences, sharing drafts with colleagues who request copies, incorporating insights from their research into classroom teaching or submitting their articles for publication in journals. While the open access movement and availability of free online tools have radically expanded the opportunities for individual academics to profile their work on the internet and seek out collaborative partners, most UNAM FHSS scholars have yet to take advantage of them.

➔ *Finding 8: Most UNAM FHSS scholars do not utilise social media technologies to disseminate their scholarly work.*

This means that FHSS scholars typically rely on face-to-face contact for disseminating their work, or they leave it to commercial publishing firms to handle that for them. They usually do not have a strategic dissemination plan that leverages the online platforms that would give greater visibility to their outputs. Nor are they encouraged to do so by UNAM, as they receive no rewards or incentives (yet) for publishing in OA journals or making their work available on UNAM's institutional repository. This situation is likely to change soon with the university's implementation of a new communication policy, but one of the consequences of this approach is that UNAM research does not reach the audiences that might benefit most from it, such as government ministries, development NGOs or community leaders.

➔ *Finding 9: UNAM FHSS scholars rarely, if ever, communicate their findings to government.*

This is due, in part, to the fact that many scholars do not know how to approach the relevant government personnel for communicating their work. They also worry that their research would be unintelligible to a non-academic audience, as it is written in a genre (journal article, book, etc.) that is geared for fellow academics. This is compounded by the fact that, up until very recently (August 2013), there has been no communications policy that would make scholars produce their research outputs in an open manner by default, allowing non-academics to find their research. Nor have many individual academics crafted personal dissemination strategies that would accomplish this end through their own choices.

➔ *Finding 10: UNAM FHSS scholars are enthusiastic about open access, but until recently they operated without an institutional communications policy that could leverage this sentiment.*

Networks and collaboration

Despite the challenges that beset communication practices at UNAM in the past, there is a great deal of activity at the institutional and faculty level regarding the production, dissemination and incentivisation of open scholarly outputs. Thus this context is in a dynamic state of flux. One area where positive developments are occurring is in the creation of more opportunities for collegial sharing. While there are occasional seminar opportunities, the new FHSS journal is acting to bring scholars – as writers, editors and reviewers – together in a rich and uplifting way. They have created their own dissemination vehicle through the journal, though it seeks to serve humanities and social science scholars throughout the region, not just at UNAM. Moreover, the work that the FHSS has done to contribute to the installation of the institutional repository has created more awareness of the valuable work that it is doing.

➔ *Finding 11: UNAM is gradually creating avenues for research dissemination and collegial sharing.*

While this sharing has been productive at the faculty level, it has not been able to translate regionally into greater research collaboration. This is not for lack of trying, but rather for more practical, logistical and financial reasons. The networks that UNAM scholars are able to benefit from are most often those that are with developed country scholars who enjoy the financial resources and administrative capacity to run large, transnational research projects. A number of FHSS scholars enjoy significant connectivity within these international networks. This is one of the reasons why such a large proportion of FHSS research projects are funded by international universities.

➔ *Finding 12: UNAM FHSS scholars often find it easier – for financial and practical reasons – to collaborate with scholars in the global North than in Africa.*

Research culture

These research, communication and networking conditions at UNAM have developed what we can call a "nascent" research culture. UNAM and the FHSS are taking important strides in developing a more robust academic core based on an enhanced research mission, but its fulfilment will take time.

➔ *Finding 13: UNAM's research culture is best described as nascent.*

This description is warranted for several reasons, but primarily because:

- There is a low level of networking, collaboration and communication between colleagues within the faculty, though opportunities have been gradually expanding.
- There is a low sense of peer expectation regarding collegial research production (i.e. colleagues do not put pressure on each other to publish).
- There is a comparatively low participation rate in journal review editorial boards, meaning that UNAM FHSS scholars are not shaping their fields so much as just

following what others are doing.
- A large proportion of the FHSS academic staff are lecturers or junior lecturers who are largely devoted to the teaching mission rather than a research mission.

This description is likely to change in the future as the university continues to invest further resources into the research mission. But it provides a clear snapshot of this transitional moment in the university's history.

Policy

This transition is being directed both by the UNAM administration and by senior scholars who are attuned to international trends and how they might apply to their unique local setting.

Institutional culture

The institutional culture at UNAM is best described as "developmental", in that leadership is not centralised (in a "managerial" fashion) nor decentralised (as in a pure "collegial" sense), but is distributed across faculties where senior scholars (or "elders") act as models who exemplify good research activity to others and, in turn, develop their capacity. These senior scholars often occupy positions of leadership in faculties, departments or committees, distinguishing themselves by their solid research and publication records. It is they as individuals who "lead by example", often providing mentoring to junior scholars and exemplifying ideal scholarly behaviour to others who are still learning what constitutes good research. Power in this system is not top-down (managerial), side-to-side (collegial), but front-back (developmental). The leaders who are motivating for and creating a dynamic research culture are not necessarily the administrators, but are fellow peers who enjoy positions of collegial responsibility.

➔ *Finding 14: Senior scholars at UNAM lead by example in building a stronger research culture.*

These scholars' charismatic and positional authority lends credibility to whatever initiatives they participate in. That is why their contribution to the new institutional repository has been seen as crucial for motivating other scholars to do the same.

Beyond this structural power feature at UNAM, the university is distinguished from many other regional universities by the high level of alignment that it has with the national government regarding the institution's commitment to helping reach the country's developmental goals, as outlined in Vision 2030 and the various iterations of the National Development Plan. The UNAM administration and many of its scholars enjoy close relationships to the government (often providing contract work for various ministries) and are keen to produce research that answers directly to national development priorities.

➔ *Finding 15. University managers and scholars are both keen to contribute to national development through research.*

However, recent debates between Namibian civil society organisations and the government caution us against any over-enthusiastic response to the university's high level of alignment with the government's policies. Considering some of the problematic language included in the Research, Science and Technology Act – which many local research groups believe will serve more to control and monitor research in the country than promote and open it – there is no guarantee that university–government alignment is always beneficial. If "alignment" simply means "compliance" with restrictive protocols, then it would not lead to an optimal research and communication environment characterised by openness, transparency and intellectual freedom.

Rewards and incentives

As mentioned above, UNAM's rewards and incentives offer substantial recognition for the production of non-traditional research outputs that can reach a broader audience. While scholar-to-scholar outputs remain highly rated, the university also incentivises outputs – such as briefs and working papers – that would be useful for the government, industry or community personnel.

➔ *Finding 16. UNAM rewards the production of non-traditional outputs that are more accessible for multiple audiences.*

However, just because such accessible outputs are incentivised (by the university) and produced (by the scholars), this has not always meant that these outputs have reached the audiences that could benefit most from them, because most of their dissemination practices have revolved around scholar-to-scholar interactions. This was due, in part, to the fact that, up until very recently, the university did not have a communications policy that would enhance the likelihood of its research reaching beyond the academy.

Open access

The UNAM administration long ago recognised the potential of open access scholarship through its UNAM Research Strategy (2005) in which the implications for OA to help forward national development is made clear. But since that time, there was little movement in integrating that sentiment into policy. That has changed recently with the university's ratification of a new communications policy (UNAM 2013) that puts OA at the centre of its dissemination and development plans.

➔ *Finding 17. UNAM has developed its open access ambitions by incorporating them into a broader communications strategy.*

But this process required something that had been missing for many years after the UNAM Research Strategy was written in 2005, that of an "institutional champion" who

could raise awareness about the merits of OA to impact national development. Some scholars were aware of various aspects of OA, but their knowledge was incomplete and they lacked a catalysing influence to force deliberation of the issue. That has changed in the past few years as a few senior scholars have taken on the role of institutional champions for open access. It was they who ensured that OA would move into high-level institutional discussions and eventually become embedded in institutional policy.

➔ *Finding 18. Institutional champions have been necessary at UNAM for raising awareness about open access, even though that awareness must eventually be institutionally embedded if it is to have longevity.*

Thus, it remains an open question how successful all of these efforts will be in the long run, but for SCAP, our engagement with institutional champions at UNAM has had a profound impact on our ability to make a contribution to the university beyond our limited engagements with different academics.

Infrastructure and capacity

As a young institution with a nascent research culture, UNAM remains open and responsive to new communication strategies because it has not yet become stuck in any "traditional" patterns of scholarly dissemination yet. These are still being negotiated. As part of this, UNAM has been proactive about getting the appropriate e-infrastructure for enhancing scholarly communication, such as a new website, an institutional repository and a scholarly profiling (e-portfolio) mechanism. What is most impressive about this is that it has been done despite the fact that some of these technologies "failed" in the past at the institution because they were not integrated into the broader institutional policy and support infrastructure. But rather than avoid using these technologies again, the university has used the lessons from that experience to help ensure that the same mistakes are avoided this time.

➔ *Finding 19. A legacy of e-infrastructure deficits is being attended to with the establishment of a new website, institutional repository and scholarly profiling (e-portfolio) mechanism.*

The key difference this time is that these technologies are being embedded in institutional policies in which the key stakeholders and other intermediaries are identified and made accountable for their performance. The university has had the necessary conversations to determine who "owns" and who "administers" these e-infrastructure.

Previously, some new technologies were simply inserted into a scholarly communication ecosystem without a full understanding of how they fit into it. But now, through continuous meetings between the various stakeholders, it is clearer how these technologies contribute to the broader institutional mission and participate with other technologies to achieve it.

Greater attention has also been paid to the impact that these technologies would have on the work capacities of the current university staff. Thus it hasn't been simply assumed that a given staff cohort, such as librarians, would have the necessary skills or capacity to run such technologies just because they are located in libraries in other parts of the world. Rather, the leadership has sought to assess whether librarians can add such new responsibilities to their current ones, or whether they need further training or new personnel. This has been a fraught process, but crucial for the success of the new scholarly communication technologies that the university is hoping to utilise to increase the visibility and reach of its research.

➔ *Finding 20. The inclusion of new technologies into a scholarly communication ecosystem requires extensive and continued retraining of the relevant support staff.*

Conclusion

The University of Namibia is in the process of trying to transition from a teaching-oriented institution to a more research-oriented one. This is in line with the government's desire that the university contribute to national development through research. The university has been successful in aligning its policies with that of the government, creatively translating those goals into meaningful action at the institutional level. Thus while both the government and the university agree that UNAM should produce more research, the question has been, "What is the most optimal and sustainable way to do that?" Also, while both bodies desire that UNAM research reach a broad audience that can leverage it for development, another question has been, "By what means can this goal be achieved?"

The answers to these questions have recently been proposed in the new research and dissemination strategies, guidelines and policies that UNAM has adopted (due in part to SCAP's engagement with the university). Though these are still in the process of being made operational, the next number of years will bear out how well the university has answered these questions through these policies.

As has been noted, UNAM's transition toward a more research-oriented university has not always been comfortable for UNAM academics, many who see their primary contribution to the academy as teaching. Reinforcing this, many FHSS scholars carry heavy teaching and administrative burdens that decrease the time they have for research. Many find it difficult to access funding for their research and thus end up carrying out small-scale, local projects that are often interpretive or derivative in nature. They struggle to get funding beyond the small research budget at the university, unless it is through consultancy research (an opportunity that allows them to carry out original, empirical work, but whose dissemination is restricted by proprietary data agreements). Furthermore, a minority of FHSS scholars do not want their research to be visible owing to a number of personal, social, cultural and professional reasons.

However, FHSS academics produce a wide range of outputs, which they share through professional, virtual and face-to-face means. The university's performance guidelines reward this broad production effort, though up until recently scholars had not been

offered any incentives for utilising open communication practices (even though most of them believe in the OA ethic). Thus, while faculty members produce a variety of research outputs items (articles, papers, briefs, reports, etc.), they rarely communicate them to government personnel, nor do they utilise Web 2.0 platforms for communicating with a broader audience. This may change with the installation of the institutional repository and the promotion of the new Communications Policy.

Indeed, UNAM's proactive administration has tried to align its practices with both national development imperatives and international dissemination trends. This has led to beneficial policy developments that allow the university to remain true to its locally determined desires while enjoying the benefits of international communication standards that allow for greater dissemination, reach and visibility.

Because of the university's (and the faculty's) energetic response to its scholarly communication challenges, SCAP believes that UNAM and the FHSS will be able to leverage its cultural, technological and policy attributes to make significant contributions to regional scholarship and national development. With this in mind, we offer recommendations to the government, university, faculty and research funders for enhancing scholarly communication at UNAM in the next chapter.

Chapter 9. Recommendations

To optimise scholarly communication at the University of Namibia (UNAM), the SCAP team believes that there are four stakeholders that can play a dynamic role in improving UNAM's dissemination activity: the national government, the UNAM administration, UNAM scholars and research funding agencies. Each of these groups contributes to research and communication practices at the institution, thereby impacting the potential visibility of UNAM scholars' research outputs. In this chapter, we provide recommendations tailored to each of these stakeholders, with an eye towards enhancing research production, open dissemination and regional collaborative opportunities.

To the national government

Build a national research infrastructure

Establish a national research fund so that scholars can seek local funding from more sources than just the UNAM research budget. Use that fund to provide larger grants than the university provides so that scholars can embark on more ambitious empirical research projects. Require that all funded research projects be made open access.

Implement a virtuous research funding cycle as called for in the UNAM Research Strategy (similar to the SAPSE system in South Africa) in which, for each recognised output produced by a scholar and disseminated in an open access fashion, funds are directed into that scholar's faculty research budget for the sake of both rewarding and incentivising the future production of open access research.

To the UNAM administration

Enhance the institutional research culture

Offer a reduction in teaching time to scholars who demonstrate ambitious research activity.

Establish digital platforms and communication channels for sharing publication success by UNAM scholars. Use website profiles, email circulars and other communication opportunities to tell stories that develop a collegial environment in which research, open dissemination and peer expectation (the social pressure to engage in research) is prized.

Incorporate output profiling on the institutional repository (IR) within the broader institutional research management system. Integrate, rather than isolate, the repository with the institutional research management system.

Incentivise open dissemination

Formalise and implement an institutional scholarly communication policy which includes open access mandates that all publicly funded research be made open access, either through publication in open access journals or deposit in the IR. (This appears to be implied in the new UNAM Communications Policy of 2013).

Develop digital project managers' capacity to drive new institutional initiatives and liaise with institutional stakeholders. Give them the mandates, resources and time necessary to fulfil the promise of these new positions.

Link performance assessment of scholars' outputs to what they deposit or profile in the IR. This will encourage academics to utilise the IR and take advantage of open access communication opportunities where possible.

Publish all UNAM-affiliated journals online and make them open access.

Establish a policy of support for and payment of article processing charges.

Explore open source platforms – such as Open Journal Systems (OJS), Open Conference Systems (OCS) – for linking to research activity.

Provide support services for scholarly communication

Establish or identify support service providers who can translate scholars' research for government and community-based audiences (i.e. condensing journal articles into accessible policy briefs).

Develop a communication officers/content managers network within UNAM so that disparate dissemination activity can be pursued in a more cohesive and strategic manner.

Continue to invest in training and capacity for library staff so that they can operate effectively in the new scholarly communication paradigm.

Support scholars in trying to develop as much of their consultancy (contract) research for academic purposes by authorising the University Central Consultancy Bureau (UCCB) to take a strategic, organised bargaining approach to consultancy negotiations, seeking outcomes that benefit both the funders and the academics.

Enhance the faculty-level research culture

Develop a quality assurance workflow process that incentivises senior scholars to review and give feedback to junior scholars who want to deposit their alternative outputs on the IR. This will build mentoring opportunities into the normal work process of the university, gradually developing up a collegial research culture.

Reduce administrative duties for academics – such as registering students and invigilating exams – to free them for academically productive pursuits. Allow graduate students to handle such tasks where possible.

Train and incentivise scholars to use Web 2.0 platforms so that they can make their own research more visible, enhance their collaboration opportunities and participate in broader virtual networks.

Leverage regional expertise

Collaborate in the construction of short-term regional exchanges for administrators and librarians. This would allow them to be immersed in other contexts in which they can learn new skills and approaches through interaction with senior hosting staff members. They would be responsible for producing an output from their experience and sharing it with staff members at home.

Invest in regional journal production opportunities.

Incentivise regional research collaboration through enhanced funding and recognition for SADC-based activities.

To UNAM scholars

Raise personal visibility

Share responsibility with the administration for research visibility. Communicate research findings not only to academic colleagues, but also to the civil society, industry and governmental audiences that could best leverage it for developmental purposes.

Deposit research outputs on the new institutional repository, making them more visible and accessible.

To research funding agencies

Include a plan for capacity-building at Southern African universities where technological interventions are envisaged. Do not assume that staff members in the

region possess the same skills or job responsibilities as those with similar titles elsewhere.

Fund research into a meta-level analysis of all "open" activities (open access, science, data, educational resources, etc.) both in the region and within the agency's funding umbrella, so that points of intersection can be explored in future projects.

Determine the feasibility of developing a regional megajournal. Prepare costings for launching one new OA megajournal (in the style of *PLOS ONE*). The study should include consideration of: how to provide publishing services (hosting, editorial services, peer review management); researcher interest and willingness to take on the new challenges involved; readiness of research funders to support the venture in terms of cash and support for the principle and the practicalities involved; and how this journal can be made viable; and how it should be sustained and supported.

References

Abrahams L, Burke M & Mouton J (2010) Research productivity-visibility-accessibility and scholarly communication in Southern African universities. *The African Journal of Information and Communication* (10): 20–36

Abrahams L, Burke M, Gray E & Rens A (2008) *Opening access to knowledge in Southern African universities*. Johannesburg: SARUA. Available at: www.sarua.org/files/publications/OpeningAccess/Opening_Access_Knowledge_2008.pdf

Adams J, King C & Hook D (2010) *Global research report: Africa*. Leeds: Thomson Reuters. Available at: http://researchanalytics.thomsonreuters.com/m/pdfs/globalresearchreport-africa.pdf

Ajayi JFA, Goma LKH & Johnson GA (1996) *The African experience with higher education*. Accra: African Association of Universities

Archer L (2008) Younger academics' constructions of "authenticity", "success" and professional identity. *Studies in Higher Education* 33(4): 385–403

ASSAF (Academy of Science of South Africa) (2006) *Report on a strategic approach to research publishing in South Africa*. Pretoria: ASSAF. Available at: www.assaf.co.za/wp-content/uploads/reports/evidence_based/assaf_strategic_research_publishing.pdf

ASTII (African Science, Technology and Innovation Indicators Initiative) (2010) *African innovation outlook 2010: Executive summary*. Pretoria: ASTII. Available at: www.nepad.org/system/files/NEPAD_AIO_Executive_Summary_web.pdf

Barclay A (2002) The political economy of brain drain at institutions of higher learning in conflict countries: Case of the University of Liberia. *African Studies Association* 30(1): 42–46

Barry B, Chukwuma V, Petitdidier N, Cottrell L & Barton C (2008) Digital divide in sub-Saharan African universities: Recommendations and monitoring. Paper Presented at the IST-Africa Conference, Windhoek, Namibia, 7–9 May 2008. Available at: www.slac.stanford.edu/cgi-wrap/getdoc/slac-pub-13853.pdf

Benkler Y (2006) *The wealth of networks: How social production transforms markets and freedom*. New Haven: Yale University Press

Bergquist WH & Pawlak K (2008) *Engaging the six cultures of the academy: Revised and expanded edition of* The Four Cultures of the Academy. 2nd edn. San Francisco: Jossey-Bass

Björk B-C (2007) A model of scientific communication as a global distributed information system. *Information Research* 12(2): paper 307. Available at: http://informationr.net/ir/12-2/paper307.html

Bloom D, Canning D & Chan K (2005) *Higher education and economic development in Africa*. Washington, DC: The World Bank. Available at: http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1099079956815/HigherEd_Econ_Growth_Africa.pdf

BOAI (Budapest Open Access Initiative) (2002) The Budapest Open Access Initiative declaration. Available at: www.budapestopenaccessinitiative.org/read

Boyer EL (1990) *Scholarship reconsidered: Priorities of the professoriate*. New York: The Carnegie Foundation for the Advancement of Teaching

Boyer EL (1996) The scholarship of engagement. *Bulletin of the American Academy of Arts and Sciences* 49(7): 18–33

Boyer Commission on Educating Undergraduates in the Research University (1998) *Reinventing undergraduate education: A blueprint for America's research universities*. Stony Brook, New York: SUNY–Stony Brook

Brown C (2011) *Are southern academics virtually connected? A review of the adoption of Web 2.0 tools for research collaboration by development researchers in the South*. New Delhi: GDNet. Available at: http://depot.gdnet.org/cms/files/GDNet_study_of_adoption_of_web_2_tools_v2.pdf

CEQUAM (Centre for Quality Assurance and Management) (2012) *University of Namibia institutional self-evaluation report*. Windhoek: CEQUAM. Available at: www.unam.na/centres/quality/documents/Institutional_Self_Evaluation_Report.pdf

Chaiklin S & Lave J (eds.) (1993) *Understanding practice: Perspectives on activity and context*. New York: Cambridge University Press

Chan L, Kirsop B & Arunachalam S (2011) Towards open and equitable access to research and knowledge for development. *PLOS Medicine* 8(3): e1001016

Chien C-L & Chiteng F (2011) New patterns in student mobility in the Southern African Development Community. In P Kotecha (ed.) *Building regional higher education mobility through academic mobility*. SARUA: Johannesburg, pp. 6–22. Available at: www.sarua.org/files/publications/SARUA%20leadership%20Dialogue%20Series/Leadership%20Dialogue%20series%20Vol%203%20No%201.pdf

CIBER (Centre for Information Behaviour and the Evaluation of *Research*) (2010) *Social media and research workflow*. London: Emerald. Available at: http://ciber-research.eu/download/20101111-social-media-report.pdf

Clobridge A (2012) *Berlin 10 open access conference recap*. Available at: http://newsbreaks.infotoday.com/NewsBreaks/Berlin--Open-Access-Conference-Recap-86197.asp

Cloete N, Bailey T & Maassen P (2011) *Universities and economic development in Africa: Pact, academic core and coordination (synthesis report)*. Cape Town: HERANA. Available at: http://chet.org.za/download/file/fid/70

COAR (Confederation of Open Access Repositories) (2012) *Open Access Africa & Berlin 10 meeting reflections, part 3 (of 3): OA and implications for universities*. Available at: www.coar-repositories.org/news/nov2012southafricaoameetings-part3/

Cole M & Engeström Y (1993) A cultural historical approach to distributed cognition. In G Salamon (ed.) *Distributed cognition: Psychological and educational considerations*. Cambridge: Cambridge University Press

Cooper D (2009) University-civil society (U-CS) research relationships: The importance of a "fourth helix" alongside the "triple helix" of university-industry-government (U-I-G) relations. *South African Review of Sociology* 40(2): 153–180

Cooper D (2011) *The University in development: Case studies of use-oriented research*. Cape Town: HSRC Press. Available at: www.hsrcpress.ac.za/product.php?productid=2286

Cronin B (2003) Scholarly communication and epistemic cultures. *New Review of Academic Librarianship* 9(1): 1–24

Crush J & Pendleton W (2012) The brain drain potential of students in the African health and non-health sectors. *International Journal of Population Research*. Article ID 274305

Cullyer H & Walters DJ (2008) *Priorities for the Scholarly Communications Program. 2008 annual report to the Mellon Foundation*. Available at: www.mellon.org/news_publications/annual-reports-essays/presidents-essays/priorities-for-the-scholarly-communications-program

Czerniewicz L (2013) Power and politics in a changing scholarly communication landscape. Paper presented at the 34th Conference of the International Association of Scientific and Technological University Libraries (IATUL), Cape Town, April 2013. Available at: http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1982&context=iatul

Daniels H (2008) *Vygotsky and research*. London: Routledge

DST (Department of Science and Technology) (2013) *National survey of research and experimental development (2009-2010 fiscal year)*. Johannesburg: HSRC. Available at: www.dst.gov.za/index.php/resource-center/rad-reports/602-2009-10-r-d-survey-high-level-key-results

Echezona RI & Ugwuanyi CF (2010) African university libraries and internet connectivity: Challenges and the way forward. *Library Philosophy and Practice*. Paper 421. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1446&context=libphilprac

Engeström Y (1987) *Learning by expanding: An activity theoretical approach to developmental research*. Helsinki: Orienta-Konsultit Oy

Engeström Y (1996) Developmental studies of work as a test-bench of activity theory: The case of primary care medical practice. In J Lave & S Chaiklin (eds.) *Understanding practice: Perspectives on activity and context*. Cambridge: Cambridge University Press

Engeström Y (1999) Innovative learning in work teams: Analyzing cycles of knowledge creation in practice. In Y Engeström, R Miettinen & R-L Punamaki (eds.) *Perspectives on activity theory*. Cambridge: Cambridge University Press

Engeström Y (2000) From individual action to collective activity and back: developmental work research as an interventionist methodology. In P Luff, J Hindmarsh & C Heath (eds.) *Workplace studies: Recovering work practice and informing system design*. Cambridge: Cambridge University Press

Engeström Y (2001) Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work* 14(1): 133–156

Engeström Y, Miettinen R & Punamaki R (eds.) (1999) *Perspectives on activity theory*. Cambridge: Cambridge University Press

Ernst RE (2010) The follies of citation indices and academic ranking lists. A brief commentary to 'Bibliometrics as weapons of mass citation'. *Chimia* 64(1&2): 90

Etzkowitz H (2004) The evolution of the entrepreneurial university. *International Journal of Technology and Globalisation* 1(1): 64–77

Ferreira M, Rodrigues E, Baptista AA & Saraiva R (2008) Carrots and sticks: Some ideas on how to create a successful institutional repository. *D-Lib Magazine* 14(1/2). Available at: www.dlib.org/dlib/january08/ferreira/01ferreira.html

Finch J (2012) *Accessibility, sustainability, excellence: How to expand access to research publications*. Report of the Working Group on Expanding Access to Published Research Findings: The Finch Group. Available at: www.researchinfonet.org/wp-content/uploads/2012/06/Finch-Group-report-FINAL-VERSION.pdf

Flyvbjerg B (2011) Case study. In N Denzin & Y Lincoln (eds.) *The Sage handbook of qualitative research* (4th edn.). Thousand Oaks, California: Sage

Friedlander A (2008) The triple helix: Cyberinfrastructure, scholarly communication, and trust. *Journal of Electronic Publishing* 11(1): 1–11

Fuchs C & Horak E (2008) Africa and the digital divide. *Telematics and Informatics* 25: 99–116

Gargouri Y, Hajjem C, Larivière V, Gingras Y, Carr L & Brody T (2010) Self-selected or mandated, open access increases citation impact for higher quality research. *PLOS ONE* 5(10): e13636

Garvey WD & Griffith BC (1972) Communication and information processing within scientific disciplines: Empirical findings for psychology. *Information Storage and Retrieval* 8: 123–136. Available at: http://infocuib.laborales.unam.mx/~mt12s01j/archivos/data/2/42.pdf

Geisecke J (2011) Institutional repositories: Keys to success. *Journal of Library Administration* 51(5–6): 529–542

Gibbons M (1997*)* What kind of university? Research and teaching in the 21st century. 1997 Beanland Lecture. Melbourne: Victoria University of Technology. Available at: www.uws.edu.au/__data/assets/pdf_file/0017/405251/Gibbons_What_Kind_of_University.pdf

Gibbons M, Limoges C, Nowotny H, Schwartzman S, Scott P & Trow M (1994) *The new production of knowledge: The dynamics of science and research in contemporary societies*. London: Sage

Global Innovation Index (2012) *Global innovation index ranking*. Available at: www.globalinnovationindex.org/userfiles/file/GII-2012-Report.pdf

Government of Namibia (2004a) *Namibia vision 2030: Framework for long-term national development*. Windhoek: Office of the President. Available at: www.gov.na/vision-2030

Government of Namibia (2004b) *Research, Science and Technology Act, 2004*. Windhoek: Government Gazette of the Republic of Namibia. Available at: www.jura.uni-wuerzburg.de/fileadmin/EXT00170/user_upload/Dateien/Datenbank/Public_Law/ACT619.pdf

Government of Namibia (2012) *Fourth National Development Plan (NDP4) 2012/13–2016/2017*. Windhoek: Office of the President. Available at: www.gov.na/ndp-4

Gray E (2006) At the South Eastern frontier: The impact of higher education policy on African research publication. Paper delivered at the CODESRIA-ASC Conference on Electronic Publishing and Dissemination, Leiden, The Netherlands, 6–8 September 2006. Available at: www.policy.hu/gray/docs/ASC_Codesria_conference_paper.doc

Gray E (2010) Access to Africa's knowledge: Publishing development research and measuring value. *African Journal of Information and Communication* 10: 4–19. Available at: http://ahero.uwc.ac.za/index.php?module=cshe&action=downloadfile&fileid=18409092513353583836914

Gray E & Kahn R (2010) Two different versions of the knowledge society: Access to research. In A Rens & R Khan (eds.) *Access to knowledge in South Africa*. Yale Law School: New Haven, CT, pp. 147–168. Available at: http://yaleisp.org/wp-content/uploads/2009/10/A2K-in-SA.pdf

Gray E, Trotter H & Willmers M (2012) Scholarly communication in Africa: Aligning strategy and technology for increased visibility of Southern African research. Proceedings of the 2012 International Association for Media and Communications Research Conference. Available at: www.academia.edu/2898170/Scholarly_Communication_in_Africa_Aligning_Strategy_and_Technology_for_Increased_Visibility_of_Southern_African_Research

Griffiths R (2004) Knowledge production and the research–teaching nexus: The case of the built environment disciplines. *Studies in Higher Education* 29(6): 709–726

Gu F & Widén-Wulff G (2011) Scholarly communication and possible changes in the context of social media: A Finnish case study. *The Electronic Library* 29(6): 762–776

Habib A & Morrow S (2007) Research, research productivity and the state in South Africa. *Journal for Higher Education Advancement* 5(1): 113–130

Harle J (2010) *Growing knowledge: Access to research in East and Southern African universities*. London: The Association of Commonwealth Universities. Available at: www.acu.ac.uk/publication/download?id=291%20

Harley D (2008) The university as publisher: Summary of a meeting held at UC Berkeley on Nov 1, 2007. *Journal of Electronic Publishing* 11(2). Available at: http://dx.doi.org/10.3998/3336451.0011.208

Harley D, Acord SK, Earl-Novell S, Arter J, Lawrence S & King CJ (2010) *Assessing the future landscape of scholarly communication: An exploration of faculty values and needs in seven disciplines*. Berkeley: UC Berkeley Center for Studies in Higher Education. Available at: http://escholarship.org/uc/item/15x7385g

Harley D, Earl-Novell S, Arter J, Lawrence S, and King CJ (2007) The influence of academic values on scholarly publication and communication practices. *Journal of Electronic Publishing* 10(2): 1–13

Harnad S (2009) Institutional repository success is dependent upon institutional mandates: The affirmative argument. *Bulletin of the American Society for Information, Science and Technology*. Available at: www.asis.org/Bulletin/Apr-09/AprMay09_Harnad-McGovern.pdf

Houghton JW, Steele C & Henty M (2004) Research practices and scholarly communication in the digital environment. *Learned Publishing* 17(3): 231–249

Houghton J, Rasmussen B, Sheehan P, Oppenheim C, Morris A, Creaser C, Greenwood H, Summers M & Gourlay A (2009) *Economic implications of alternative scholarly publishing models: Exploring the costs and benefits*. London: JISC. Available at: www.jisc.ac.uk/publications/reports/2009/economicpublishingmodelsfinalreport.aspx

Hurd JM (2000) The transformation of scientific communication: A model for 2020. *Journal of the American Society for Information Science* 51(14): 1279–1283

InfoDev (2008) Enhancing the livelihoods of the rural poor through ICT: A knowledge map – South Africa country study. InfoDev Working Paper No. 13. Available at: www.infodev.org/en/Document.516.pdf

JISC (Joint Information Systems Committee) (2012) *Researchers of tomorrow: The research behaviour of Generation Y doctoral students*. London: JISC. Available at: www.jisc.ac.uk/media/documents/publications/reports/2012/Researchers-of-Tomorrow.pdf

Karram G (2011) The international connections of religious higher education in sub-Saharan Africa: Rationales and implications. *Journal of Studies in International Education* 15(5): 487–499

Kiangi GE (2005) *University of Namibia research strategy*. Windhoek: UNAM. Available at: www.unam.na/research/documents/UNAMResearchStrategy.pdf

King CJ, Harley D, Earl-Novell S, Arter J, Lawrence S & Perciah I (2006) *Scholarly communication: Academic values and sustainable models*. Berkeley: UC Berkeley Center for Studies in Higher Education. Available at: http://escholarship.org/uc/item/4j89c3f7

King K (2006) Research as consultancy in the African university: A challenge to excellence. In J Ozga, T Seddon & T Popkewitz (eds.) *World yearbook of education 2006 – Education, research and policy: Steering the knowledge-based economy*. London: Routledge

Kirby-Harris R (2003) Universities responding to policy: Organisational change at the University of Namibia. *Higher Education* 45(3): 353–374

Kotecha P, Walwyn D & Pinto C (2011) *Deepening research capacity and collaboration across universities in SADC: A Southern African Universities Regional Research and Development Fund*. Johannesburg: SARUA. Available at: www.sarua.org/files/publications/RDFund/SARU_RD%20Fund_May%202011%20Ver%201.pdf

Kotecha P, Wilson-Strydom M & Fongwa SM (eds.) (2012) *A profile of higher education in Southern Africa – Volume 2: National perspectives*. Johannesburg: SARUA. Available at: www.sarua.org/files/publications/SARUA%20leadership%20Dialogue%20Series/SARUA%20Profiles%20of%20HE%20Vol%202.pdf

Kreps DM (1997) Intrinsic motivation and extrinsic incentives. *The American Economic Review* 87(2): 359–364

Laakso M, Welling P, Bukvova H, Nyman L, Björk B-C & Hedlund C (2011) The development of open access journal publishing from 1993 to 2009. *PLOS ONE* 6(6): e20961. Available at: www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0020961

Laakso M & Björk B-C (2012) Anatomy of open access publishing: A study of longitudinal development and internal structure. *BMC Medicine* 10: 124. Available at: www.biomedcentral.com/1741-7015/10/124

Lawrence PA (2008*)* Lost in publication: How measurement hurts science. *Ethics in Science and Environmental Politics* 8: 9–11

Lehmann S, Lautrup B & Jackson AD (2003) Citation networks in high energy physics. *Physical Review E* 68(2): 026113. Available at: http://link.aps.org/doi/10.1103/PhysRevE.68.026113

Limb P (2007) The politics of digital "reform and revolution": Towards mainstreaming and African control of African digitisation. *Innovation* 34(June): 18–27

Lindow M (2011) *Weaving success: Voices of change in African higher education*. New York: Institute of International Education. Available at: www.fordfoundation.org/pdfs/library/weaving-success.pdf

Mahlaha N (2012) Namibia. In P Kotecha, M Wilson-Strydom & SM Fongwa (eds.) (2012) *A profile of higher education in Southern Africa – Volume 2: National perspectives*. Johannesburg: SARUA. Available at: www.sarua.org/files/publications/SARUA%20leadership%20Dialogue%20Series/SARUA%20Profiles%20of%20HE%20Vol%202.pdf

Mamdani M (2011a) Africa's post-colonial scourge. *Mail & Guardian online*. Available at: http://mg.co.za/article/2011-05-27-africas-postcolonial-scourge

Mamdani M (2011b) The importance of research in a university. Keynote speech at Makerere University Research and Innovations Dissemination Conference, Hotel Africana, 11 April 2011. Available at: www.pambazuka.org/en/category/features/72782

Maron N & Smith KK (2008) *Current models of digital scholarly communication. Results of an investigation conducted by Ithaka for the Association of Research Libraries.* Washington DC: Association of Research Libraries

Metcalfe AS, Esseh S & Willinsky J (2009) International development and research capacities: Increasing access to African scholarly publishing. *Canadian Journal of Higher Education* 39(3): 89–109

Mitchell J (1984) Case studies. In R Ellen (ed.) *Ethnographic research: A guide to general conduct.* London: Academic Press

Mkandawire T (2011) Running while others walk: Knowledge and the challenge of Africa's development. *Africa Development* 36(2): 1–36

Mkandawire T & Soludo CC (1998) *Our continent, our future: African perspectives on structural adjustment*. Asmara, Eritrea: Africa World Press

Morgan C, Campbell B & Teleen T (2012) The role of the academic journal publisher and open access publishing models. *International Studies Perspectives* 13(3): 228–234

Moses I (1986) Promotion of academic staff: Reward and incentive. *Higher Education* 15(1–2): 135–149

Mosha HJ (1986) The role of African universities in national development. *Higher Education* 15(1–2): 113–134

Mouton J (2010) *The state of social science in sub-Saharan Africa: Knowledge divides (background paper)*. Paris: International Social Science Council. Available at: http://unesdoc.unesco.org/images/0019/001906/190659E.pdf

Mouton J, Boshoff N, de Waal L, Esau S, Imbayarwo B, Ritter M & van Niekerk D (2008). The state of public science in the SADC region. In P Kotecha (ed.) *Towards a common future: Higher education in the SADC region - Findings from four SARUA studies*. Johannesburg: SARUA. Available at: www.sarua.org/files/publications/TACF/Chapter4_full.pdf

Mutula SM (2008) *Evolving paradigms in the networked world and their implications for information management in African libraries*. Available at: www.ubrisa.ub.bw/bitstream/handle/10311/476/Mutula_AJLAIS_2008.pdf?sequence=1

Neylon C (2012) Science publishing: Open access must allow open use. *Nature* 492: 348–349. Available at: www.nature.com/nature/journal/v492/n7429/full/492348a.html?WT.ec_id=NATURE-20121220

Nkwelo M (2012) Namibia. In SARUA (ed.) *A baseline study on science and technology and higher education in the SADC region*. Johannesburg: SARUA, pp. 139–145. Available at: www.sarua.org/files/publications/ST_country_Namibia.pdf

Nyambura-Mwaura H & Akam S (2013) Telecoms boom leaves rural Africa behind. Available at: www.reuters.com/article/2013/01/31/us-africa-telecoms-idUSBRE90U0MK20130131

Nyamnjoh FB (2012) "Potted plants in greenhouses": A critical reflection on the resilience of colonial education in Africa. *Journal of Asian and African Studies* 47(2): 1–26

OECD (2012) *Education at a glance 2012: OECD indicators*. OECD Publishing. Available at: http://dx.doi.org/10.1787/eag-2012-en

Olukoshi A (2009) Conceptions of development in the context of the challenges of transformation facing Africa. In P. Kotecha (ed.) *Development and its implications for higher education in Southern Africa*. Johannesburg: SARUA. Available at: www.sarua.org/files/publications/SARUA%20leadership%20Dialogue%20Series/SARUA%20Leadership%20Dialogue%20Series%20Vol%201%20No%203.pdf

Oyelaran-Oyeyinka B & Nyaki Adeya C (2004) Internet access in Africa: Empirical evidence from Kenya and Nigeria. *Telematics and Informatics* 21(1): 67–81

Palmer CL (2005) Scholarly work and the shaping of digital access. *Journal of the American Society for Information Science and Technology* 56(11): 1140–1153

Palmer C & Cragin M (2008) Scholarship and disciplinary practices. *Annual Review of Information Science and Technology* 42(1): 163–212

Palmer CL, Teffeau LC & Pirmann CM (2009) *Scholarly information practices in the online environment: Themes from the literature and implications for library service development*. Dublin, Ohio: OCLC. Available at: www.oclc.org/programs/publications/reports/2009-02.pdf

Patterson M (2009) Is the end in cite? *Embo Reports* 10: 1186. Available at: www.nature.com/embor/journal/v10/n11/full/embor2009235.html

Pearson (Pearson Learning Solutions) (2010*) Social media in higher education: The survey*. Pearson Learning Solutions. Available at: www.slideshare.net/PearsonLearningSolutions/pearson-socialmediasurvey2010

Power M (1997) *The audit society: Rituals of verification*. Oxford: Oxford University Press

Procter R, Williams R, Stewart J, Poschen M, Snee H, Voss A & Asgari-Targhi M (2010) Adoption and use of Web 2.0 in scholarly communications. *Philosophical Transactions of the Royal Society* 368: 4039–4056

Raza R (2009) *Examining autonomy and accountability in public and private tertiary institutions*. Washington, DC: Human Development Network/World Bank

Regazzi JJ & Aytac S (2008) Author perceptions of journal quality. *Learned Publishing* 21(3): 225–235

Richards R (2008) *Assessing human development in SADC: 1990-2008*. Policy brief 52. Johannesburg: Centre for Policy Studies. Available at: www.cps.org.za/cps%20pdf/polbrief52.pdf

RIN (Research Information Network) (2009) *Communicating knowledge: How and why UK researchers publish and disseminate their findings*. London: RIN. Available at: www.rin.ac.uk/communicating-knowledge

RIN (2010) *If you build it, will they come? How researchers perceive and use Web 2.0*. London: RIN. Available at: http://rinarchive.jisc-collections.ac.uk/system/files/attachments/web_2.0_screen.pdf

Rossner M, Van Epps H & Hill E (2007) Show me the data. *Journal of Cell Biology* 179: 1091–1092

Rowlands I & Nicholas D (2005) Scholarly communication in the digital environment: The 2005 survey of journal author behaviour and attitudes. *Aslib Proceedings* 57(6): 481–497

Rowlands I & Nicholas D (2006) The changing scholarly communication landscape: An international survey of senior researchers. *Learned Publishing* 19(1): 31–55

Rowlands I, Nicholas D & Huntingdon P (2004) *Scholarly communication in the digital environment: What do authors want?* London: CIBER. Available at: www.homepages.ucl.ac.uk/~uczciro/ciber-pa-report.pdf

Ryan RM & Deci EL (2000) Intrinsic and Extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology* 25: 54–67

SADC (Southern African Development Community) (2012) *SADC ICT sector infrastructure development master plan*. Available at: www.sadc.int/files/9413/5293/3532/Regional_Infrastructure_Development_Master_Plan_ICT_Sector_Plan.pdf

Sall E (2001) *Academic freedom and the African community of scholars: The challenges*. Available at: www.nai.uu.se/publications/news/archives/011sall/

SARUA (Southern African Regional Universities Association) (2012) *Namibia data profile 2012*. Johannesburg: SARUA. Available at: www.sarua.org/files/Country%20Reports%202012/Namibia%20data%20profile%20Eng.pdf

Sawyerr A (2004) African universities and the challenge of research capacity development. *JHEA/RESA* 2(1): 211–240

Schauder D (1993) Electronic publishing of professional articles: Attitudes of academics and implications for the scholarly communication industry. In *1993 IATUL Proceedings*. Purdue e-Pubs: 31–35. Available at: http://docs.lib.purdue.edu/iatul/1993/papers/3

Schwartz SH (1994) Are there universal aspects in the structure and contents of human values? *Journal of Social Issues* 50(4): 19–45

Schwartz SH (2007) *Basic human values: An overview*. Available at: www.ccsr.ac.uk/qmss/seminars/2009-06-10/documents/Shalom_Schwartz_1.pdf

Schwartz SH (2012) An overview of the Schwartz Theory of Basic values. *Online Readings in Psychology and Culture* 2(1): 1–20

Seglen PO (1997) Why the impact factor of journals should not be used for evaluating research. *British Medical Journal* 314: 497

Shore C & Wright S (1999) Audit culture and anthropology: Neo-liberalism in British higher education. *The Journal of the Royal Anthropological Institute* 5(4): 557–575

Smart JC (1978) Diversity of academic organisations: Faulty incentives. *Journal of Higher Education* (49)5: 403–419

Sondergaard TF, Andersen J & Hjorland B (2003) Documents and the communication of scientific and scholarly information. *Journal of Documentation* 59(3): 278–320

Strathern M (2000) The tyranny of transparency. *British Educational Research Journal* 26(3): 309–321

Suber P (2012) *Open access*. Cambridge, MA: MIT Press. Available at: http://mitpress.mit.edu/sites/default/files/titles/content/9780262517638_Open_Access_PDF_Version.pdf

Task Force on Higher Education and Society (2000) *Higher education in developing countries: Peril and promise*. Washington, DC: The International Bank for Reconstruction and Development, The World Bank. Available at: www.tfhe.net/report/downloads/report/whole.pdf

Taylor J (2003) A higher education perspective on linking performance indicators to extrinsic rewards: An empirical analysis. *Journal of Public Affairs Education* 9(1): 13–31

Teferra D & Altbach P (2004) African higher education: Challenges for the 21st century. *Higher Education* 47: 21–50

Tenopir C (2003) *Use and users of electronic library resources: An overview and analysis of recent research studies*. Washington DC: Council on Library and Information Resources. Available at: www.clir.org/pubs/reports/pub120/pub120.pdf

Teo TSH, Lim VKG & Lai RYC (1999) Intrinsic and extrinsic motivation in internet usage. *Omega: International Journal of Management Science* 27: 25–37

Tettey WJ (2009) Postgraduate studies in Africa: The looming crisis. *International Higher Education* 57: 13-15

Te Velde DW (2005) *Globalisation and education: What do the trade, investment and migration literatures tell us?* London: Overseas Development Institution. Available at: www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/2484.pdf

Thorin S (2006) Global changes in scholarly communication. In HS Ching, PW Poon & C McNaught (eds.) *eLearning and digital publishing*. New York: Springer-Verlag

Tijssen RJ (2007) Africa's contribution to the worldwide research literature: New analytical perspectives, trends, and performance indicators. *Scientometrics* 71(2): 303–327

Trotter H, Kell C, Willmers M, Gray E & King T (2014) *Scholarly communication in Southern Africa: Regional synthesis report*. Report of the Scholarly Communication in Africa Programme (SCAP) for the International Development Research Centre, March 2014, University of Cape Town

UIS (UNESCO Institute for Statistics) (2010) *Trends in tertiary education: Sub-Saharan Africa*. UIS Fact Sheet, No. 10. Available at: www.uis.unesco.org/FactSheets/Documents/fs10-2010-en.pdf

UNAM (University of Namibia) (2009) *Annual research report 2009*. Windhoek: UNAM. Available at: www.unam.na/ research/documents/ResearchReport2009.pdf

UNAM (2011a) *UNAM policy on teaching workloads*. Windhoek: UNAM

UNAM (2011b) *Procedures and guidelines for assessing publications by academic staff at the University of Namibia*. Windhoek: UNAM

UNAM (2011c) *Academic staff promotions*. Windhoek: UNAM

UNAM (2011d) *UNAM Strategic Plan 2011–2015*. Windhoek: UNAM

UNAM (2013) *Scholarly Communications Policy at the University of Namibia*. Windhoek: UNAM

UNESCO (United Nations Educational, Scientific and Cultural Organisation) (2012) *New patterns in student mobility in the Southern African Development Community*. Available at: www.uis.unesco.org/Education/Documents/ib7-student-mobility-africa-2012-v4-en.pdf

UNIN (United Nations Institute for Namibia) (1986) *Namibia: Perspectives for national reconstruction and development*. Lusaka: UNIN

UNISIST (United Nations International Scientific Information System) (1971) *UNISIST study report on the feasibility of a World Science Information System, by the United Nations Educational, Scientific and Cultural Organization and the International Council of Scientific Unions*. UNESCO: Paris. Available at: http://unesdoc.unesco.org/images/0006/000648/064862eo.pdf

Urama KC, Ozor N, Kane O & Hassan M (2010) *UNESCO science report 2010: The current status of science around the world*. Paris: UNESCO. Available at: http://unesdoc.unesco.org/images/0018/001899/189958e.pdf

Vallerand RJ, Pelletier LG, Blais MR, Briere NM, Senegal C & Valliers EF (1992) The academic motivation scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement* 52: 1003–1017

Vanclay J (2012) Impact factor: Outdated artifact or stepping-stone to journal certification? *Scientometrics* 92(2): 211–238. Available at: http://arxiv.org/abs/1201.3076

Varghese NV (2009) *Private sector as a partner in higher education development in Africa*. International institute for Educational Planning. UNESCO Policy Brief. Available at: www.iiep.unesco.org/fileadmin/user_upload/Research_Governance_and_Management/pdf/PB_PHE_Africa.pdf

Ware M & Mabe M (2009) *The STM report: An overview of scientific and scholarly journal publishing*. Oxford: International Association of Scientific, Technical and Medical Publishers. Available at: www.stm-assoc.org/2009_10_13_MWC_STM_Report.pdf

Weller M (2011) *The digital scholar: How technology is transforming scholarly practice*. London: Bloomsbury

Wilson-Strydom M & Fongwa SM (2012) *A profile of higher education in Southern Africa – Volume 1: A Regional Perspective*. Johannesburg: SARUA. Available at: www.sarua.org/files/publications/SARUA%20leadership%20Dialogue%20Series/SARUA%20Profiles%20of%20HE%20Vol%201.pdf

Zeleza PT (2002) The politics of historical and social science research in Africa. *Journal of Southern African Studies* 28(1): 9–23