South Africa & OA

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Berlin 4 Open Access - from Promise to Practice
30 March 2006
Albert Einstein Institute, Potsdam-Golm, Germany
Overview

- Scientific context
- OA in SA update
- Cautionary tale
SA scientific context
## Key Indicators

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2001/02</strong></td>
<td></td>
</tr>
<tr>
<td>Gross domestic expenditure on R&amp;D – GERD (millions Rand)</td>
<td>7 488.1</td>
</tr>
<tr>
<td>GERD as a percentage of GDP</td>
<td>0.76</td>
</tr>
<tr>
<td>Total R&amp;D personnel (FTE)</td>
<td>21 195</td>
</tr>
<tr>
<td>Total researchers (FTE)</td>
<td>14 182</td>
</tr>
<tr>
<td>Total researchers per 1000 total employed (FTE)</td>
<td>3.1</td>
</tr>
<tr>
<td>Total R&amp;D personnel per 1000 total employed (FTE)</td>
<td>4.6</td>
</tr>
<tr>
<td>Estimated civil GERD as a percentage of GDP</td>
<td>0.71</td>
</tr>
<tr>
<td>Total researchers (headcount)</td>
<td>26 913</td>
</tr>
<tr>
<td>Women researchers as a percentage of total researchers</td>
<td>36.0%</td>
</tr>
<tr>
<td><strong>2003/04</strong></td>
<td></td>
</tr>
<tr>
<td>10 082.6</td>
<td></td>
</tr>
<tr>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td>25 185</td>
<td></td>
</tr>
<tr>
<td>14 129</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td>3.9</td>
<td></td>
</tr>
<tr>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td>30 703</td>
<td></td>
</tr>
<tr>
<td>38.0%</td>
<td></td>
</tr>
</tbody>
</table>

*The 0.76% for 2001/02 is as reported in the 2001/02 R&D Survey Report and is not based on revised GDP figures.

FTE = Full Time Equivalent

Following OECD practice, doctoral students are included as researchers.

Changes in the methodology used by Statistics South Africa in the Survey of Employment and Earnings have resulted in a 39% increase in the total number of employees reported for the formal non-agricultural sectors between March 2002 and March 2004.


www.hsrc.ac.za/RnDSurvey/ (April 2005)
GERD / GDP (int´l)

Gross expenditure on R&D as a percentage of GDP 2003* [International Comparisons]

* Organisation for Economic Cooperation and Development
** Expanded European Union (25 states)
Basic research / GDP (int’l)
(responsiveness to new knowledge)
FTE researchers (int’l)

Number of Full Time Equivalent (FTE) researchers per 1000 total employed in 2003* (International Comparisons)

* or latest year available

- Sweden: 106
- Japan: 99
- Norway: 87
- France: 75
- Russia: 74
- Australia: 73
- South Korea: 68
- Spain: 51
- South Africa: 22
- Argentina: 18
- China: 11
Table 2. Number of JCR indexed journals published in selected countries*

<table>
<thead>
<tr>
<th>Country</th>
<th>Journal in SCI</th>
<th>GERD/GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>2257</td>
<td>2.74</td>
</tr>
<tr>
<td>UK</td>
<td>1236</td>
<td>1.89</td>
</tr>
<tr>
<td>Netherlands</td>
<td>565</td>
<td>1.89</td>
</tr>
<tr>
<td>Germany</td>
<td>431</td>
<td>2.51</td>
</tr>
<tr>
<td>France</td>
<td>150</td>
<td>2.20</td>
</tr>
<tr>
<td>Switzerland</td>
<td>950</td>
<td>2.63</td>
</tr>
<tr>
<td>Canada</td>
<td>74</td>
<td>1.82</td>
</tr>
<tr>
<td>Italy</td>
<td>67</td>
<td>1.07</td>
</tr>
<tr>
<td>Australia</td>
<td>64</td>
<td>1.55</td>
</tr>
<tr>
<td>Denmark</td>
<td>59</td>
<td>2.39</td>
</tr>
<tr>
<td>Spain</td>
<td>26</td>
<td>0.96</td>
</tr>
<tr>
<td>Hungary</td>
<td>18</td>
<td>1.01</td>
</tr>
<tr>
<td>Ireland</td>
<td>18</td>
<td>1.17</td>
</tr>
<tr>
<td>SA</td>
<td>17</td>
<td>0.76</td>
</tr>
<tr>
<td>Sweden</td>
<td>17</td>
<td>4.27</td>
</tr>
<tr>
<td>Belgium</td>
<td>13</td>
<td>2.17</td>
</tr>
<tr>
<td>Finland</td>
<td>11</td>
<td>3.42</td>
</tr>
<tr>
<td>Romania</td>
<td>5</td>
<td>0.38</td>
</tr>
<tr>
<td>Greece</td>
<td>4</td>
<td>0.64</td>
</tr>
<tr>
<td>Portugal</td>
<td>0</td>
<td>0.93</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>0</td>
<td>1.71</td>
</tr>
</tbody>
</table>

* a) ISI Journal Citation Reports: http://www.jcr4.isi.knowledge.com
b) OECD Main Science & Technology Indicators 2003/2

Science actors

- Science councils (eight)
- National facilities (e.g. iThemba Labs (former National Accelerator Centre))
- Universities (35 => 22)
- Government departments
- Public corporations
- Private enterprise (largest funder of R&D; gov. 2nd largest funder)
SA research output

- 0.5% of world publications (ISI)
  - 50% of African publications (ISI);
- 0.1% of world patents;
  - 98% of African patents (USPTO)
- Growth absolute # of publications
- Declining rate of publication (cf. global)
- SAKnowledgebase: 99,000 articles indexed (1990-2004)
- Government incentivised scholarly publication system (akin to Australia, Spain)
OA sc initiatives in South Africa
OA activity

- ca. 2004
- SIVULILE est.
- 4 OA journals; 2 gov. accredited (DOAJ)
- 7 IRs (5 OA)
- 1 (of 8) science council (HSRC) has adopted OA publication model
- To date high-level gov. OA endorsement of access to
  - data OECD - Jan 2004;
- De Beer, JA.
  http://eprints.rclis.org/archive/00003922/

- ca. 2005/06
- 5 OA journals; 2 gov. accredited (DOAJ)
- 6 IRs (4 OA)
- CSIR going OA...
- To date high-level (NRF) tacit OA endorsement of access to
  - data & information - SA NRF & ICSU/CODATA - Sept 2005 & March 2006
  ...+ IPR publicly-funded research (Bayh-Dole (USA) type of legislation))
- Möller, A.
  http://eprints.rclis.org/archive/00005815/
Earliest study

  
  http://eprints.rclis.org/archive/00003922/
SIVULILE ("we are open" - isiXhosa)

- Informal OA working group
  - Hussein Suleman
    
  - Susan Veldsman
  - Jennifer De Beer
  - Dale Peters
  - Dynal Patel

Hussein, Susan, Jennifer, Dale

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Dynal Patel
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SIVULILE timeline

- July 2004 - first SA OA conference (OSI / SASLI)
- November 2004 - SIVULILE 1st planning meeting
- May 2005 - 1st IR workshop on DSpace (OSI eIFL / SASLI)
- December 2005 - 2nd workshop: building DLs with Greenstone (UNESCO / SASLI)
- Q3 + Q4 2006 - ETDs: measure to manage (CHELSA + NRF)
DSpace training workshop (a.k.a. how to build your own IR) - May 2005
Self-archiving (1)

- ROAR & OpenDOAR
  - Univ of Johannesburg (inc. RAU)
    http://etd.rau.ac.za
  - Rhodes University
    http://eprints.ru.ac.za
  - University of Cape Town CS
    http://pubs.cs.uct.ac.za
  - Univ of Pretoria
    http://upetd.up.ac.za
Self-archiving (2)

- Rhodes eResearch Repository
  - First IR (cf. ETD) in South Africa
  - Launched officially 2 Feb 2006
  - All content Open Access - policy decision taken in 2005
  - Possible embargo period (1 - 5 years) for theses
  - 15,010 abstract views => 120 distinct countries;
  - 15,831 document downloads => 139 distinct countries
  - Eprints Community founder member
Rhodes eResearch Repository

Generated by http://archives.eprints.org/
Usage Statistics for Rhodes eResearch Repository

Most viewed eprints: [Past four weeks] [This year] [Last year] [All years]
Repository-wide statistics: [by Year] [by Month] [by Country]

Abstract views and document downloads by country (derived from IP address of query)

Note: The country of origin is determined by looking up the source IP address in the GeoLite Country database provided by MaxMind LLC. Due to the ever changing nature of the Internet, this database can never be 100% complete or accurate, so it is possible that a small number of downloads may be reported as from the wrong country.

Click on a country name or flag to view details of the eprints that have been downloaded from that country.

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<thead>
<tr>
<th>Country</th>
<th>Abstracts</th>
<th>Downloads</th>
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<td>7017</td>
<td>6948</td>
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<tr>
<td>South Africa</td>
<td>966</td>
<td>1733</td>
</tr>
<tr>
<td>Mauritius</td>
<td>1788</td>
<td>1132</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>476</td>
<td>825</td>
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<tr>
<td>India</td>
<td>144</td>
<td>539</td>
</tr>
<tr>
<td>Rhodes University</td>
<td>1304</td>
<td>491</td>
</tr>
<tr>
<td>Japan</td>
<td>406</td>
<td>267</td>
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<td>Germany</td>
<td>81</td>
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<td>Canada</td>
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<td>Australia</td>
<td>104</td>
<td>196</td>
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<tr>
<td>China</td>
<td>39</td>
<td>188</td>
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<tr>
<td>Sweden</td>
<td>362</td>
<td>179</td>
</tr>
<tr>
<td>Spain</td>
<td>122</td>
<td>169</td>
</tr>
</tbody>
</table>
OA Publishing

- HSRC (www.hsrcpress.ac.za)
- All publications OA
- CEO est. dedicated Publications dept.
- 200+ titles online as PDF
- Print-on-Demand purchase option
- Publication output part of research budget
- Expansion into/ across Africa
Forthcoming Titles

The Development Decade?: Economic and Social Change in South 1994-2004
Vishnu Padayachee (ed)

South African Social Attitudes: Changing Times, Diverse Voices
Udesh Pillay; Benjamin Roberts; Stephen Rule (eds.)

New Titles

Teacher education and the challenge of diversity in South Africa
Crispin Hamson

Creating Knowledge Networks:
Glenda Knox; Gilton Klerk; Andrew Paterson; Shane Godfrey

Debating High Skills and Joined Up Policy
André Knaap; Hugh Lauder; Phillip Brown; David Ashton

Multinationals on the periphery: DaimlerChrysler South Africa, human capital upgrading and regional economic development
Jo Lorenzen

Higher education and work: Setting a new research agenda
Charlton Koen

More...
Latest study

- Allison Möller, 2006. The case for open access publishing, with special reference to open access journals and their prospects in South Africa. Thesis.

http://eprints.rclis.org/archive/00005815/
SA NRF/ICSU/CODATA

- CODATA Workshop on Strategies for Permanent Access to Scientific Information in Southern Africa

- Exec Summary
  http://stardata.nrf.ac.za/html/ExecSummaryFinal.doc
Scientific and technical (S&T) data and information policy (p5)
CODATA outputs should include examples of national policies that establish the record-keeping policies of various nations such as the USA, United Kingdom and Australia. This could help inform the South African National Archives Act, which currently makes no mention of the mandatory collection and preservation of S&T data and information, but refers only to public administrative records.

And further regarding STM journals (p8):
The following kinds of actions should be taken with regard to scientific, technical and medical (STM) journals:
- Establish and implement policy interventions by research funders (including governments and institutions) that:
  - Mandate that scholars make pre-prints and e-prints of their research available via an open access medium.

[My emphasis in bold]
Two arguments circulating

• Bandwidth before OA
  (i.e. wait for bandwidth, OA initiatives in and for the developing world can come later)

• rather

• Bandwidth for OA
  (I believe that the case for cheaper bandwidth can be strengthened by making arguments about the benefits of OA for the developing world, hence let’s have cheaper bandwidth now rather than later, and in the meantime let’s not wait on our OA initiatives anyway, because we need to...)
Question assumptions

- Development?
- Digital divide?
- Flat world (Friedman)
- Nodes/hubs (Castells)

• We speak of a “flat world” but forget that image and its effects as soon as we speak of the “digital divide”
A bit of history

• 2004 study into OA in SA
• “study is (i.a.) premature... we don´t have b/width in Africa” (May 2004)
• “Africa needs bandwidth before we can promote OA” (Feb 2006)
• We should check our notion of “digital divide”
• “Digital divide” usually equates with “basic access” of the sort illustrated in the picture; it automatically implies a trajectory of coming from “no connectivity” to “connectivity”
• But there are those in the developing world who are already connected...
...as characterises those living in cities in the developing world; are we meeting their information & research needs?
Photo is illustrative of that of which I speak; the already-connected, in a lab of 200+ computers in a faculty at an university in a developing country.
We speak of the “digital divide” as if an undifferentiated whole.

In doing so, we frequently forget of the already-connected in the developing world:
  - who have information needs (obviously)
  - who (may) already benefit from open access

The danger is that we halt work on OA initiatives (which I think goes some way to explaining sometimes the lack of OA progress in the developing world), whilst waiting for “the miracle of greater/cheaper bandwidth” and so inadvertently retard access to content for the already-connected.

It is said that there is still a “Berlin wall in the head” for some here.

We should check whether we really don’t have the infrastructure, or whether we aren’t simply dealing with a “digital divide in the head” sometimes.
For interest/information
Gloss

- CHELSA - Committee for Higher Education Libraries in South Africa
- CODATA - Committee on Data for Science and Technology
- COSALC - Coalition of South African Library Consortia
- CSIR - Council for Scientific and Industrial Research
- HSRC - Human Sciences Research Council
- ICSU - Int’l Council of Scientific Unions / Int’l Council for Science
- NRF - National Research Foundation (SA)
- SASLI - South African Site Licensing Initiative
- OSI - Open Society Institute
- SIVULILE - not acronym
HE institutions: post-2005

Universities
1. The University of the North and the Medical University of Southern Africa (University of Limpopo from January 2005)
2. The University of KwaZulu-Natal
3. The University of Zululand
4. The University of Fort Hare
5. Rhodes University
6. The Nelson Mandela Metropolitan University
7. The University of Cape Town
8. Stellenbosch University
9. The University of Stellenbosch
10. The University of the Western Cape
11. North-West University
12. The University of the Free State
13. University of Johannesburg
14. The University of Pretoria
15. The University of South Africa
16. University of Venda
17. The University of Witswatersrand

Universities of Technology
4. Durban Institute of Technology (Management: Technician in joint DIT)
7. The Border and Eastern Cape Technikons (Eastern Cape University of Technology from January 2005)
12. Cape Technikons and Peninsula Technikons will merge (Cape Peninsula University of Technology from January 2005)
15. Central University of Technology, Free State
21. Tswane University of Technology
22. Vaal University of Technology

Image source: http://www.heads.org.za
Thank you

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