11. SWAZILAND

Swaziland does not have a Science and Technology policy in place. UNESCO is currently assisting Swaziland in writing a policy and identifying strategic research areas.

Areas of specialization in R&D

Local Research institutions
Research in Swaziland is done solely by the University of Swaziland. The sugar cane industry outsources its research to institutions within South Africa. A research institution that is part of the University of Swaziland is the Swaziland Institute for Research in Traditional Medicine, Medicinal and Indigenous Food plants (SIRMIP).

SIRMIP provides a forum for the meeting of TMPs, orthodox medical practitioners, natural and social scientists, lawyers, agriculturists, nutritionists and policy makers to tackle multifaceted research agenda inherent in nutrition and traditional medicine. The facilities of the Institute will be available for scholars from different parts of the world to carry out research and disseminate their results for human benefit.

The Institute is Swaziland's leading Institution for the design, coordination and execution of multidisciplinary research in traditional medicine and indigenous wild edible and medicinal plants. It strives to combine the expertise of scientists and TMPs with a view to producing derived pharmaceuticals and promoting the use of traditional medicine in national health care, and to creating general awareness regarding indigenous food plants.

Research output
Swaziland's output of 102 papers between 2001 and 2007 means that it is the second smallest publishing country in the region behind Lesotho. Nearly all of this small output is produced by staff at the University of Swaziland. The University also has an in-house journal, the UNISWA Research Journal of Agriculture, Science and Technology, which is regularly published.

SWAZILAND

Political Facts
- King Mswati III has been the head of state since 1986. The current prime Minister is Thamba Dlamini
- Swaziland gained its independence from the UK in 1968

Economic Facts
- Coal is the major mineral resource
- Swaziland is largely a rural society where a large proportion of rural households practice subsistence agriculture. The economy is based on agriculture and agro-industry, mainly sugar, citrus and wood pulp
- Growth in GDP averaged at 2.2% in 2005 and 2006

Demographic Facts
- Estimated population is 1.16 million (2007).
- The HIV/AIDS prevalence rate in 2005 was 33.4%

Education Facts
- Adult literacy rate is 79.6% in 2000

ICT Facts
- In 2005 there were 31 telephone lines per 1 000 people and 32 internet users per 1 000 people

Simone Esau, CREST
Table 94: Number of Publications by Source Title

<table>
<thead>
<tr>
<th>Source Title</th>
<th>Record Count</th>
<th>% of 105</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ostrich</td>
<td>7</td>
<td>6.7%</td>
</tr>
<tr>
<td>Physics and Chemistry of the Earth</td>
<td>7</td>
<td>6.7%</td>
</tr>
<tr>
<td>Bulletin of the Chemical Society of Ethiopia</td>
<td>3</td>
<td>2.9%</td>
</tr>
<tr>
<td>African Journal of Ecology</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Animal Feed Science and Technology</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Applied Mathematics and Computation</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Archives of Mechanics</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Biodiversity and Conservation</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>British Medical Journal</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>JANAC-Journal of the Association of Nurses in Aids Care</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Journal of Advanced Nursing</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Lancet</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Physica Scripta</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>SAMJ South African Medical Journal</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>South African Journal of Economics</td>
<td>2</td>
<td>1.9%</td>
</tr>
<tr>
<td>Tropical Agriculture</td>
<td>2</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

Size of the R&D work force

Universities R&D workforce

The University of Swaziland (UNISWA) is the only institution of higher learning in the country and has three campuses situated in Mbabane, Luyengo and Kwaluseni. The University provides programmes and courses that are relevant to the human resources needs of the country and that are in line with regional and global trends. (www.uniswa.sz). The number of students enrolling at tertiary institutions is summarized in Table 95 below. The teacher training enrolment figures have been declining steadily since 2000/1 whilst TVET has marked a slight rise in student numbers. UNISWA had a slight fall in student numbers in 2001/2 but picked up again in 2002/3 and 2003/4.
Table 95: Higher education enrolments 2000/01-2003/04

<table>
<thead>
<tr>
<th>Institution</th>
<th>2000/1</th>
<th>2001/2</th>
<th>2002/3</th>
<th>2003/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVET</td>
<td>757</td>
<td>804</td>
<td>974</td>
<td>807</td>
</tr>
<tr>
<td>Teacher training</td>
<td>1 750</td>
<td>919</td>
<td>919</td>
<td>1 033</td>
</tr>
<tr>
<td>UNISWA</td>
<td>2 648</td>
<td>2 521</td>
<td>2 739</td>
<td>3 164</td>
</tr>
</tbody>
</table>


The University of Swaziland has a total of 10 institutes and centres. These are:

**Institutes**
- Institute of Distance Education (IDE)
- Institute of Postgraduate Studies (PGS)
- Swaziland Institute for Research in Traditional Medicine, Medicinal and Indigenous Food Plants (SIRMIP)

**Centres**
- Academic Development Centre (ADC)
- Centre for Community Service (CCS)
- Consultancy and Training Centre (CTC)
- UNISWA Health Information and Counseling Centre (HICC)
- University Planning Centre (UPC)
- UNISWA Research Centre (URC)

The UNISWA Research Centre serves as the focal point for research at the University. It endeavors to facilitate the coordination, strengthening, promotion, generation, accumulation and dissemination of knowledge and information through research to enhance economic growth and development and promote socio-cultural values (UNISWA, 2005).

**Trends in masters and doctoral enrolments**
No information available

**Key R&D Initiatives and Networks**

**Key Initiatives**
Swaziland is part of the Skills for Development project, which aims to improve the research skills of mathematics, science and technology education (MSTE) researchers in eight countries in Southern Africa. The project is structured as part of the skills development programme of an existing regional professional organisation, i.e. the Southern African Association for Research in Mathematics, Science, and Technology Education (SAARMSTE). (Lubben & Sanders, 2005:81). The main impact of the project, in Swaziland, has been on policy making, where a close collaboration with the Ministry of Education culminated in major evidence-informed changes incorporating context-based learning approaches in the junior secondary science curriculum. The commissioning of several researchers for the development, piloting and evaluation of a school textbook by a local publisher represents impact on practice. Other spin-offs were some donor-funded research and development contracts in research areas developed during the project. (Lubben & Sanders, 2005:93)

**Priority areas**
No information is available
Collaboration through international and regional networks

Southern African Network for Biosciences (SANBio) is one of the four regional networks in Africa. It has been established with the regional Hub being hosted by the Council for Scientific and Industrial Research (CSIR) in the Republic of South Africa. The network covers 12 countries in the sub-region which are: Angola, Botswana, Malawi, Mauritius, Mozambique, Namibia, Lesotho, Swaziland, Seychelles, Republic of South Africa, Zambia and Zimbabwe. (CREST & High Impact Innovation, 2007)

Facts and Figures on brain drain

Employment projections in 2006 indicate a contraction in formal employment due to the erosion in AGOA preference, the restructuring in the sugar industry together with shedding of workers by companies. The situation was exacerbated by the strength of the lilangeni/rand exchange rate, which continued to exert pressure on competitiveness of export commodities. The formal sector absorbs approximately 30% of the labour force. Currently unemployment in Swaziland is estimated at more than 30% of the economically active population, but if the definition included discouraged job seekers, the rate would be over 40%. The situation is likely to get worse with company closures, and it is projected that private sector employment will decline at 0.2% per annum over the foreseeable future (FAO, 2007:6). The Swazi government provides grants and loans for tertiary education. However, a significant number of the students who benefit from this scheme do not return to the country after training. Thus, the record of loan repayments is poor and the number of tertiary educated individuals does not increase within the country. (African Development Bank, 2005) Therefore, even though the government may be spending money on higher education and students, it does not reap the benefits of creating a skilled workforce because individuals do not return.

International and foreign funding of S&T

As of March 2007, the World Bank has supported Swaziland on 19 projects totaling about US$113 million. The World Bank’s work has made a difference in that country -- from constructing, furnishing and equipping 31 new primary schools to building new road systems to expanding water supply and sewerage systems. http://web.worldbank.org/external/default/main?menuPK=375140&pagePK=141155&piPK=141124&theSitePK=375023

Southern African Network for Biosciences (Sanbio), discussed under section 11.3.3 is mainly sponsored by donors such as:

- The European Commission (including the thematic priorities, International Cooperation and the Marie Curie mobility instruments),
- The Rockefeller Foundation,
- Japan International Cooperation Agency (JICA),
- Welcome Trust,
- UN agencies,
- USAID,
- The Royal Society,
- Government bilateral projects.
- Canadian government
- The Bill and Melinda Gates Foundation.

(CREST & High Impact Innovation, 2007)