

List of abbreviations

AFORNET	African Forestry Research Network
ARIPO	African Regional Intellectual Property Organization
AWF	African Wildlife Foundation
AWRD	Agriculture, Water & Rural Development
BOS	Bureau of Standards
CGS	Czech Geological Survey
COSDEC	Community Skills Development Centre
CRII	Council for Research and Industrial Innovation
CSTE	Council for Science & Technical Education
CVIT	Council for Vocational and Industrial Training
DRFN	Desert Research Foundation of Namibia
DRST	Directorate of Science, Research & Technology
EEAN	Environmental Evaluation Associates of Namibia
FIST	Fund for Innovation in Science & Technology
FRST	Foundation for Research, Science & Technology
GDP	Gross Domestic Product
GERD	Gross Expenditure on Research and Development
GMO	Genetically Modified organisms
HDI	Human Development Index
HDR	Human Development Report
HE	Higher Education
HESS	High Energy Stereoscopic System
HETEC	Higher Education, Training & Employment
ICT	Information & Communication technology
IKS	Indigenous Knowledge System
ISI	Institute for Scientific Information
MASTEP	Mathematics & Science Teachers Educational Program
MHE	Ministry of Higher Education
MOE	Ministry of Education
MOF	Ministry of Finance
MRCC	Multidisciplinary Research & Consultancy Centre
NCSRT	National Commission on Research, Science & Technology
NIDIIA	National Democratic Institute for International Affairs

responsible for making laws that are implemented by the executive and interpreted by the judiciary branch.

Section 2: Country characteristics

2.1 *Basic economic outlook*²

The economy is heavily dependent on the extraction and processing of minerals for export. Mining activities account for 20% of the Namibian GDP. Rich alluvial diamond deposits make Namibia a primary source for gem-quality diamonds. Namibia is the fourth-largest exporter of non-fuel minerals in Africa, the world's fifth-largest producer of uranium, and the producer of large quantities of lead, zinc, tin, silver, and tungsten. The mining sector employs only about 3% of the population while about half of the population depends on subsistence agriculture for its livelihood. Namibia normally imports about 50% of its cereal requirements; in drought years food shortages are a major problem in rural areas. A high per capita GDP, relative to the region, hides the world's worst inequality of income distribution. The Namibian economy is closely linked to South Africa with the Namibian dollar pegged one-to-one to the South African rand. Privatization of several enterprises in coming years may stimulate long-run foreign investment. Increased fish production and mining of zinc, copper, uranium, and silver spurred growth in 2003-05.

Table 1: Selected economic Indicators of Namibia

BASIC ECONOMIC DATA	
GDP	\$27.07 billion (2005 est.)
GDP-Growth	0% (2005 est.)
GDP per capita	\$700 (2005 est.)
Inflation Rate	4.3% (2005 est.)
GDP composition per sector	Agriculture (43.2%); industry (17.2%); services (39.6%) (2004 est.)

Currency: Namibian Dollars; Source: Compiled from CIA Fact Sheet and US PolitInfo Websites

2.2 *Demographic characteristics*

Table 2 summarizes the demographic characteristics of Namibia as published in the CIA fact book and presents a picture of a country that is mainly a desert, with very dry hot climatic conditions, a small population of diverse ethnic origins and more males than females in all the age groups. Education and services have been extended in varying degrees to most rural areas in recent years. The estimated adult literacy rate of Namibians was relatively high at 84% as of 2003. However, although the national literacy rate is estimated to be 84%, it is important to note that the number of Namibians who are functionally literate and have the skills that the labour market needs is significantly fewer.

² CIA – Fact book

Table 2: Summary of geographic and demographic characteristics of Namibia

GEOGRAPHY	
Area	land: 825,418 sq km
Capital	Windhoek
Admin Regions	Caprivi, Erongo, Hardap, Karas, Khomas, Kunene, Ohangwena, Okavango, Omaheke, Omusati, Oshana, Oshikoto, Otjozondjupa
Climate	desert; hot, dry; rainfall sparse and erratic
Nationality	Namibian(s)
Population	2,044,147 (July 2006 est.),
Age Structure	0-14 years: 38.2% (male 393,878/female 387,147); 15-64 years: 58.1% (male 596,557/female 591,350);
Population Growth	65 years and over: 3.7% (male 34,245/female 40,970) (2006 est.) 0.59% (2006 est.)
Religions	Christian 80% to 90% (Lutheran 50% at least), indigenous beliefs 10% to 20%
Language	English 7% (official), Afrikaans 60%, indigenous languages (Oshivambo, Herero, Nama)
Literacy	Definition: age 15 and over can read and write: total population: 84%; male: 84.4%; female: 83.7% (2003 est.)
Health	<i>Total:</i> 48.1 deaths/1,000 live births; <i>male:</i> 51.99 deaths/1,000 live births; <i>female:</i> 44.09 deaths/1,000 live births (2006 est.)
Workforce	820,000 (2005 est.)
Workforce Occupation	– by Agriculture: 47%, industry: 20%, services 33% (1999 est.)

Source: Compiled from CIA Fact Sheet and US PolitInfo Websites

Section 3: Science & technology system

3.1 Governance of science and technology

3.1.1 The National Science and Technology Policy of Namibia³

The cabinet approved the Science and Technology Policy in June 1999. The aims of the policy were:

- To put the Science and Technology programs in place.
- To benefit the nation in a way that it can exploit and beneficiate the country's natural resources
- To increase the use of indigenous skills, entrepreneurs, resources & facilities.
- To widen the scope for both diversification and new earnings.

³ Research, S & T Policy of Namibia, 1999

- To increase exports and reduce dependence on the sale of unprocessed primary products such as mining, cattle and fishing.
- To create a paradigm shift in individual and corporate attitude towards productivity and international competitiveness.

3.1.2 *Institutional arrangements*

3.1.2.1 *The Ministry of Higher Education*

To achieve its objectives the Ministry of Higher Education consults on a regular basis with public and private sector institutions such as the Directorate of Research, Science and Technology (DRST), Government and public agencies.

The main science and technology coordinating institutions are:

- National Commission on Research, Science and Technology (NCRST)
- Foundation for Research, Science & Technology (FRST)-operators of the Fund for Innovation in Science & Technology (FIST)
- Council for Research and Industrial Innovation (CRII)
- Council for Science and Technical Education (CSTE)
- Council for Vocational and Industrial Training (CVIT)
- S&T Information Centre (STIC)

The science and technology implementing organizations are:

- CRII & research institutes
- University of Namibia (UNAM) and Polytechnic of Namibia (PON)
- FRST, STIC and Bureau of Standards (BOS)
- Private Sector Industries
- Private Sector laboratories
- The Directorate of Research, Science and Technology (DRST)⁴

The DRST is composed of three main divisions, which are responsible for:

- The facilitation of the development of R, S & T Acts, Policies and Regulations as guided by the National Development Goals.
- Development of a National Scientific, Engineering, Research and Expert database for Namibia in order to plan RST development.
- Creation of a scientific awareness and literacy in Namibia.
- Facilitation of the development of a national scientific and technical human and institutional capacity building.
- To create linkages between education and industry for exploring value added production opportunities.

3.1.3 *Science & Technology Priorities*⁵

3.1.3.1 *Mission*

- To spearhead, co-ordinate and influence the development and implementation of appropriate policies, infrastructure, institutional arrangements and advocate the mechanisms necessary to encourage research, technical and scientific education, innovations and their output, and to facilitate value adding linkages between and among industry, commerce, S & T institutions and the wider community.

3.1.3.2 *Vision*

DRST envisions a programme of sustained awareness, wide and consistent use, development, integration and application of appropriate science and technology (S&T) by all Namibians in their work, study and leisure and its translation into necessary skills, value adding investments, jobs, goods, services and progressive growth in personal, corporate and national incomes.

3.1.3.3 *Projects*

- Create a Commission for Research, Science and technology
- Develop an Industrial and innovation Policy
- Develop a National Research Funding System
- Biotechnology Act for regulating use and development in Namibia
- Expand Plato to Caprivi, Onwendinga, Swakopmund and Keetmanshoop
- Establishment of Science Centres
- Acquiring a Science Mobile Unit
- Establish Science Clubs and Associations

3.1.3.4 *Achievements*

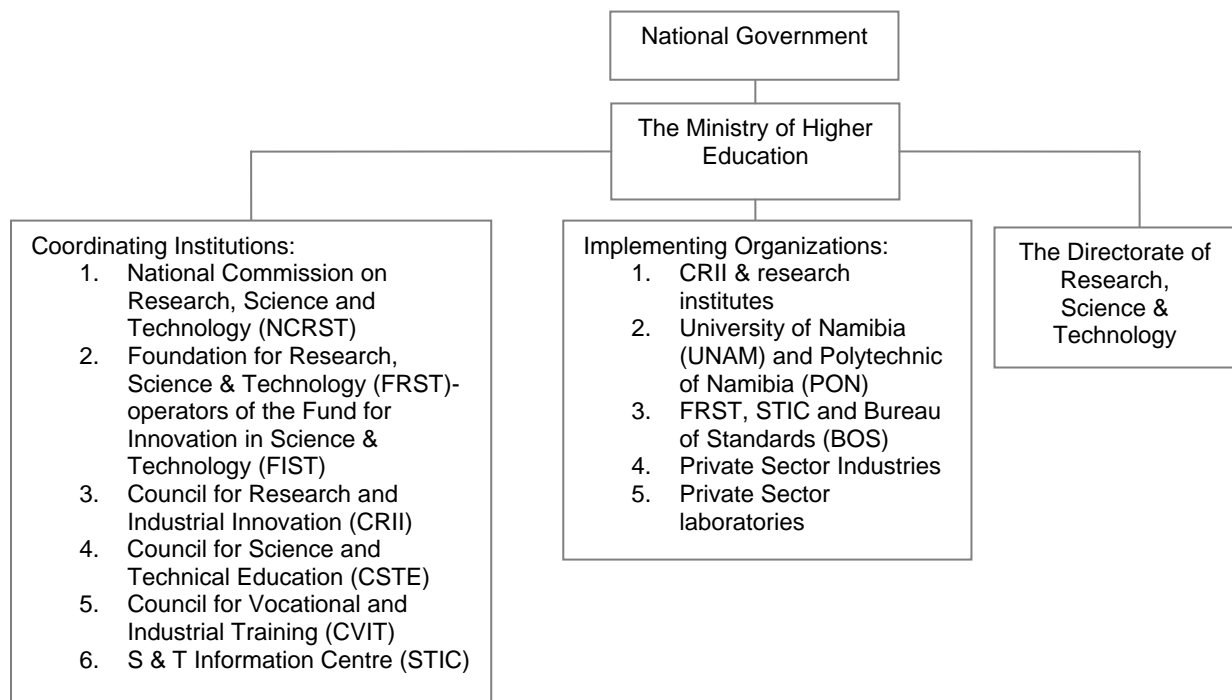
- National policy on RST (1999)
- Research, Science and Technology Act (2004)
- Policy on enabling the safe use of Biotechnology (1999)
- A country study on biosafety in Namibia
- Policy on ICT in Education for Namibia (2005)
- Establishment of Olute, a Cereal Food Research and development centre at COSDEC Odangwa
- Hosted two Science Awards in 2004 and 2005
- Plato Centre for Maths and Science improvement at Rossing centre in Windhoek

3.1.3.5 *R&D priorities*

- Animal products
- Fisheries & marine products
- Wildlife
- Agriculture

- Medicine & cosmetics
- Mineral resources
- Housing & construction
- Engineering & tertiary manufacturing
- ICT
- Renewable energy
- Biotechnology
- Environment
- Human sciences and
- Policy research and indigenous technologies

Fig 2: Schematic presentation of Namibia's S&T institutional arrangement



3.2 Science and technology landscape

3.2.1 R&D Performing Institutes

Table 3 lists tertiary institutions and centres of R&D and S&T Service in Namibia that are actively involved in S & T research and development and it is apparent that Namibia still relatively lags far behind in terms of tertiary institutions even if one considers its low population.

Table 3: Present science and technology infrastructure

NAME OF INSTITUTION		
Educational Institutions: University of Namibia (UNAM) Multidisciplinary & Consultancy Centre at UNAM Zero Emission Research Initiatives (ZERI) at UNAM Polytechnic of Namibia (PON)	Centres of R & D and S & T service: Solar Energies by the Ministry of Mines and Energy Water Management Research by Namibia Water Company & Ministry Agriculture Research activities by the Ministry of Agriculture and Rural development Desertification Programs by the Desert Research Foundation of Namibia (DRFN) Desert Ecology and Enviroteach Programs by Desert Educational Research Unit, a unit of DRFN. This program has trained teachers in environmental related subjects. It has also one of the most well equipped libraries in Southern Africa.	Sam Njoma I Marine & Coastal Research Centre Namibian Institute of Mining and Technology Central Veterinary Laboratory Forensic Laboratory National Forestry Research Centre National Botanical Research Institute Geological Survey of Namibia National Museums and Archives

3.3 Human capital for science & technology

3.3.1 Higher education

The tertiary education system consists of one National University, a Polytechnic, and four Education Colleges. The Faculty of Science at UNAM offers Chemistry, Biology, Computing, Engineering (a two-year course that prepares students for engineering degrees abroad), Geology, Maths, Physics and Statistics.

The School of Engineering and Information Technology at PON offers Civil Engineering, Electrical Engineering, Mathematics & Statistics, Information Technology and Technical & Vocational.

Namibia has a shortage of qualified Science and Mathematics teachers. With the assistance of European Union, Mathematics and Science teachers upgrading program was started. The University of Namibia has recently implemented a program called Mathematics and Science Teachers Educational Program (MASTEP) to upgrade teachers teaching Mathematics and Sciences at Secondary schools with the new teaching methods.

Table 4, Fig 3 & Fig 4 summarize student enrolments, graduates and gender representation at UNAM, from 1993 to 2006 and the university has seen a very steady rise, with out noticeable variation in numbers in all these categories during this period.

Table 4: Faculty of Science Enrolments & Graduates – UNAM⁶

	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	Total
Enrolment	144	148	227	298	352	352	363	472	554	632	670	685	805	883	5779
Graduates	10	11	18	35	30	33	32	29	41	40	38	77	78	77	549
Male	6	9	10	21	20	19	18	23	25	20	23	50	41	34	319
Female	4	2	8	14	10	14	14	6	16	20	15	27	37	43	230

Fig 3: Faculty of Science Enrolment/Graduates – UNAM⁷

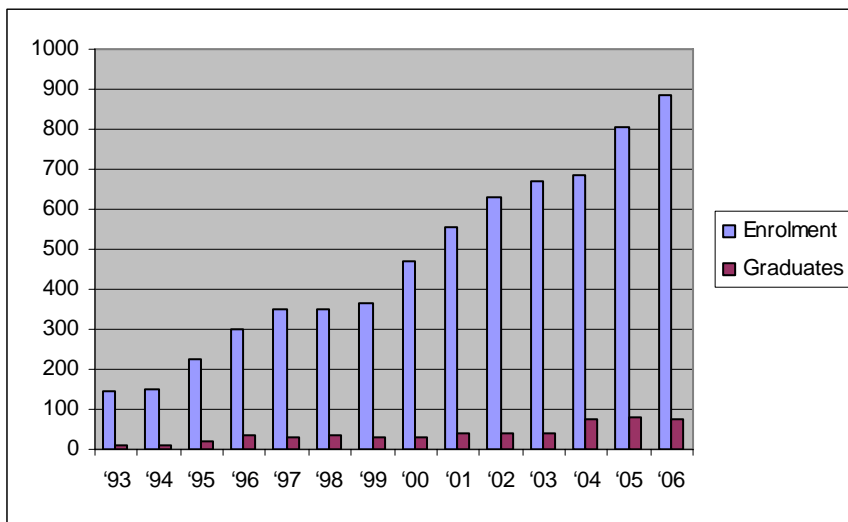
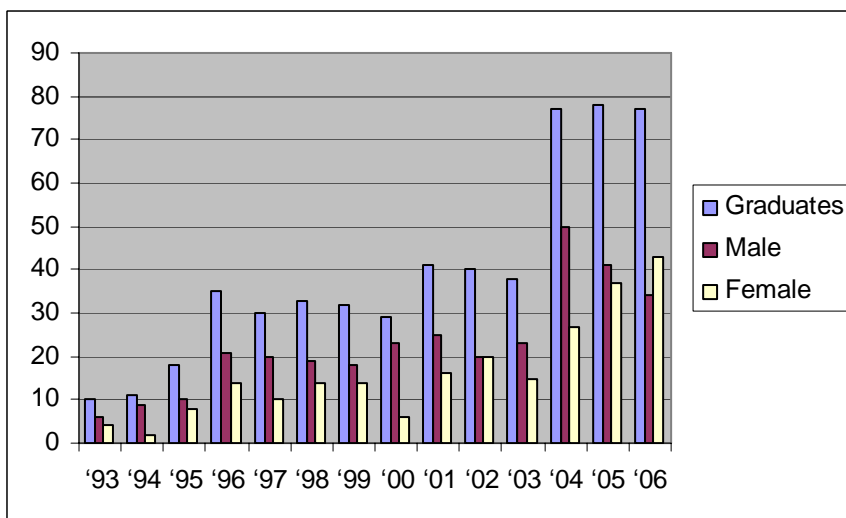


Fig 4: Faculty of Science Graduates: Male/Female – UNAM



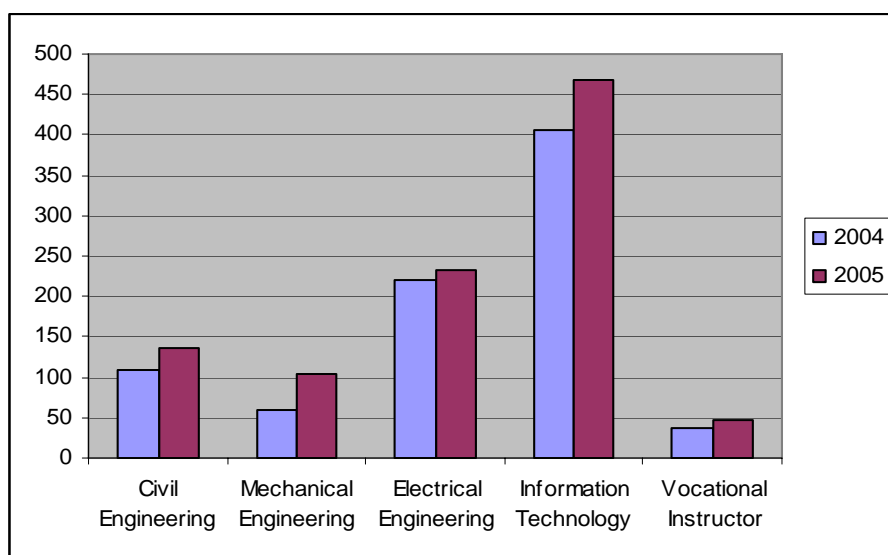
⁶ Faculty of Science Van Kent Report, 2005
⁷ Faculty of Science Van Kent Report, 2005

Table 5 & Fig 5 present student enrolment in the School of Engineering & Information Technology at PON from 2004 to 2005 and there is only a noticeable increase in the School of Mechanical Engineering.

Table 5: Enrolment School of Engineering & Information Technology - PON⁸

	Civil Engineering	Mechanical Engineering	Electrical Engineering	Information Technology	Vocational Instructor	Total
2004	108	59	221	406	36	740
2005	136	103	233	469	46	987

Fig 5: Enrolment School of Engineering & Information Technology – PON⁹



3.3.2 Masters and doctoral enrolments

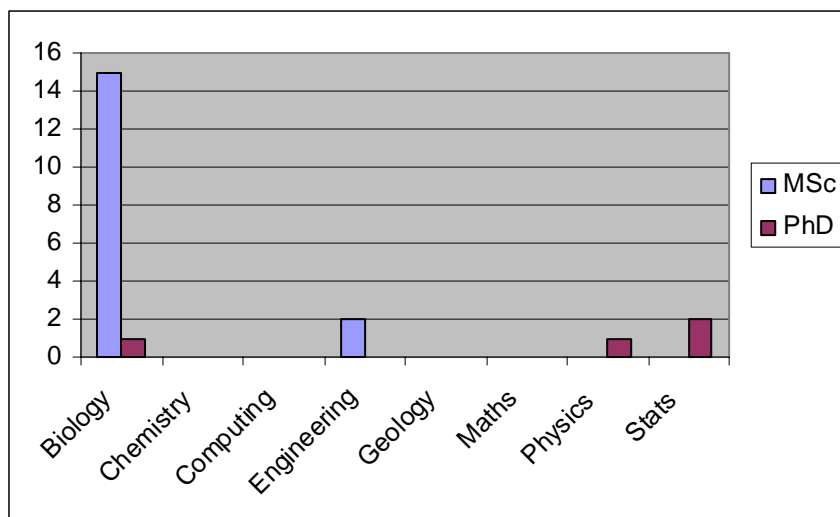
UNAM is less developed in natural sciences and as a result, there are few technical research programs. The activities of the Faculty of Science continue to concentrate mainly on the teaching of undergraduate programs in the fields of Geology, Biology, Chemistry and Physics⁴. On the other hand, PON⁵ awarded Bachelors' degrees in mechanical engineering for the first time in 2005 and only introduced the Master of Information Technology programme on the same year. Students who are doing Masters or PhD are still very few, Table 6 & Fig 6, with only Biology showing some representation at Masters level.

⁸ Polytechnic of Namibia Report, 2005
⁹ Polytechnic of Namibia Report, 2005

Table 6: Faculty of Science Postgraduate Training at UNAM¹⁰

	Biology	Chemistry	Computing	Engineering	Geology	Maths	Physics	Stats
MSc	15	0	0	2 (Wits-SA)	0	0	0	0
PhD	1	0	0	0	0	0	1	2

Fig 6: Faculty of Science Postgraduate Training at UNAM¹¹



3.3.3 *Size of the university workforce*

Table 7 & Fig 7 summarize UNAM's workforce according to local & gender representation as well as per academic qualification and one observe a very poor female representation across most departments with perhaps the exception of chemistry.

¹⁰ UNAM Faculty of Science Report 2005

¹¹ UNAM Faculty of Science Report 2005

Table 7: Faculty of Science Staffing & Courses at UNAM – 2006¹²

	Biology	Chemistry	Computing	Engineering*	Geology	Maths	Physics	Stats	Totals
N/NN	13/6	18/5	6/5	1/1	0/2	9/2	7/3	6/2	
M/F	11/8	13/10	8/3	2/0	2/0	10/1	8/2	4/4	
Total	19	23	11	2	2	11	10	8	86
Academics	10	7	6	2	2	6	5	7	45
PhDs	6	7	0	1	2	2	3	1	22
N/NN	6/4	2/5	3/3	1/1	0/2	4/2	2/3	5/2	
M/F	8/2	5/2	5/1	2/0	2/0	6/0	4/1	3/4	

N – Namibian; NN – Non-Namibian; Total number includes academic staff, technicians, laboratory assistants and tutors if any.
 *Students attend a pre-engineering course, which prepares them for engineering programmes at South African Universities.

Fig 7: Faculty of Science Staffing & Courses at UNAM – 2006¹³

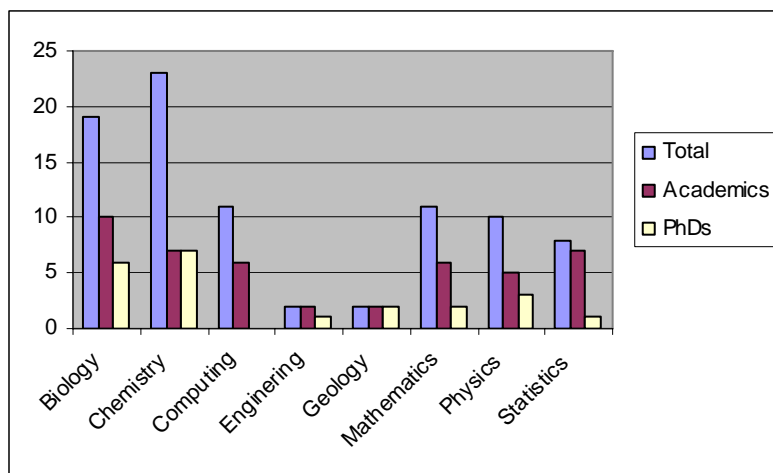


Table 8 & Fig 8 summarize PON's workforce according to gender representation as well as per academic qualification and one observes an almost non-existence of female representation across all schools.

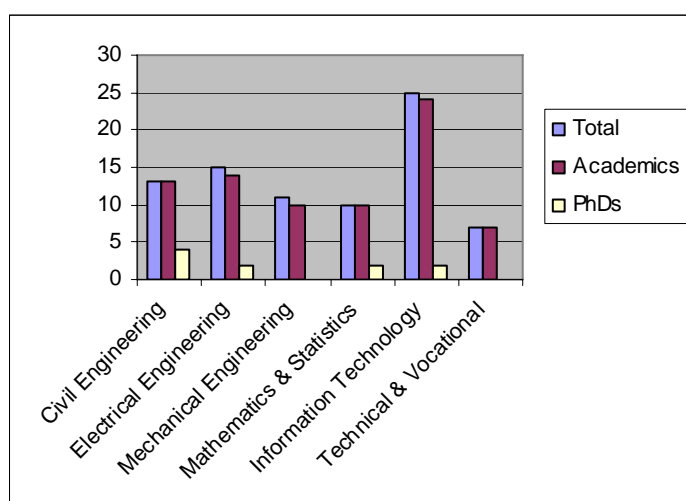
¹² UNAM Faculty of Science Report 2005
¹³ UNAM Faculty of Science Report 2005

Table 8: PON School of Engineering and Information Technology Training Staffing – 2006¹⁴

	Civil Engineering	Electrical Engineering	Mechanical Engineering	Mathematics & Statistics	Information Technology	Technical & Vocational	Totals
Total	13	15	11	10	25	7	81
M/F	12/1	13/2	10/1	9/1	22/3	5/2	
Academics	13	14	10	10	24	7	78
PhDs	4	2	0	2	2	0	10
M/F	4/0	2/0	0	2/0	2/0	0	

Total number includes academic staff, technicians, laboratory assistants and tutors if any.

Fig 8: PON School of Engineering and Information Technology Training Staffing – 2006¹⁵



3.4 Research funding

3.4.1 Government expenditure on R&D

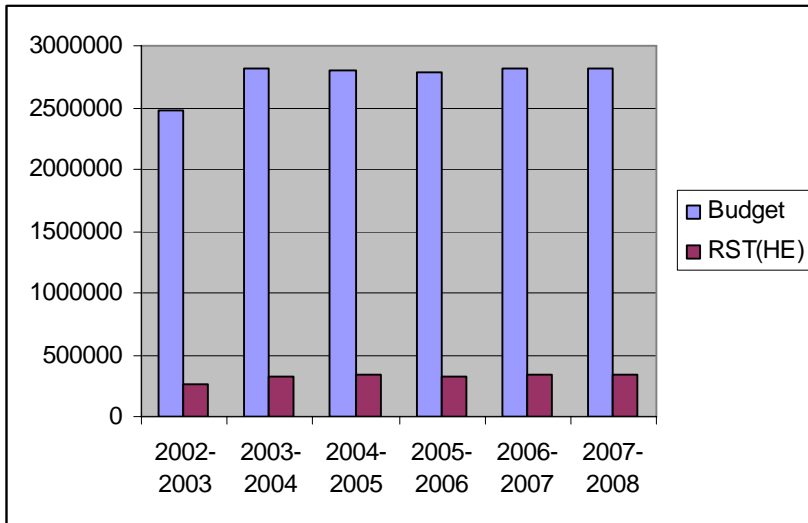
The Ministry of Higher Education (Fig 9)¹⁶ spends on average about 16% of its annual budget (4% Total Government Expenditure – 2004/05, Fig 10), on RST, Fig 9, and this indicates very low government annual expenditure on RST. Unfortunately there is no available information that compares spending on S & T with the countries GDP, and it is therefore, difficult to compare the Namibian GERD with other African countries, but based on the available data it looks like it falls far below the common trend of about 0.3 %.

¹⁴ Polytechnic Namibia Prospectus 2006

¹⁵ Polytechnic Namibia Prospectus 2006

¹⁶ <http://www.mof.gov.na>

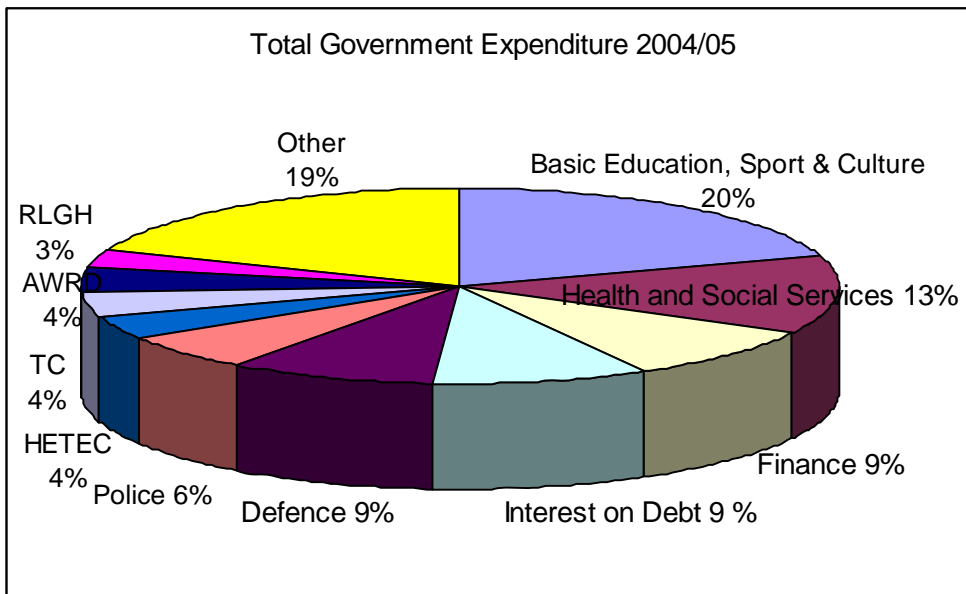
Fig 9: Budget - Ministry of Education



RST (HE): Research Science & Technology Higher Education; Currency: N\$ x '000;

Source: Ministry of Finance Website

Fig 10: Total Government Expenditure, by Main Vote 2004/05



Source: Namibia Budget 2004/05;

HETEC: Higher Education, Training & Employment Creation; TC: Transport & Communication; AWRD: Agriculture, Water & Rural Development; RLGH: Regional & Local Government and Housing

3.4.2 International donor funding

R&D work at UNAM has limited financial support from international donors (Table 9)¹⁷, the available information does not provide figures of donor funds, and this makes it difficult to identify the major role players in this respect.

Table 9: International donor funding at UNAM

	USAID	AFORNET	AWF	RAEIN-Africa	SANTED	ITHEMBA LABS	UNESCO	TREP	CGS
Biology	----	US\$68280	----	----				----	
Chemistry									
Computing									
Engineering					----	----			
Geology							----		----
Mathematics									
Physics									
Statistics									

---- Indicates support where no actual value of the donation is provided.

3.4.3 Business expenditure on R&D

There is virtually no financial support from Namibian businesses (Table 10), and indications are that R&D work at UNAM continues to be mainly supported by the university from mainly from its government allocation.

Table 10: Business financial support at UNAM¹⁸

	Biology	Chemistry	Computing	Engineering	Geology	Mathematics	Physics	Statistics
PETROFUND		----			----			

---- Indicates support where no actual value of the donation is not supplied

3.5 Research outputs

3.5.1 Publications

According to the Institute for Scientific Research, Namibia has produced a number of publications (Table 11 & Fig 11) between the years 1994 – 2004, and the low numbers are indicative of the small size of the S & T system of the country.

¹⁷ UNAM Faculty of Science Report 2005

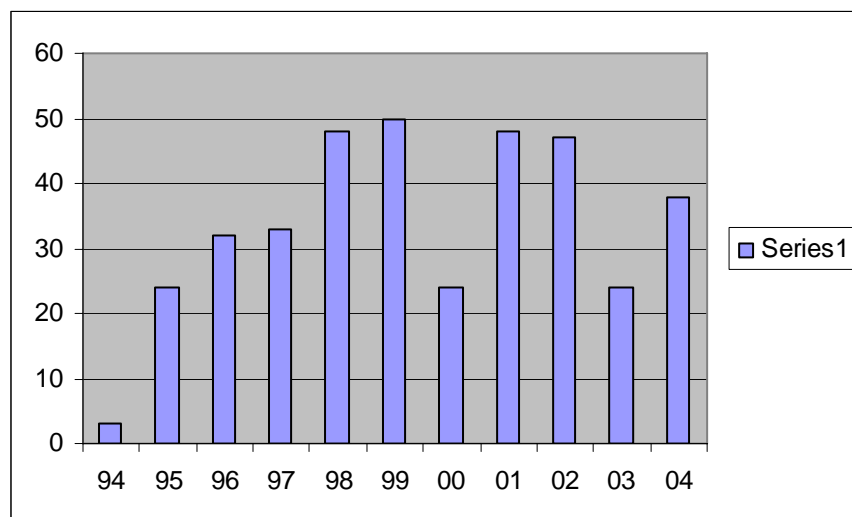
¹⁸ UNAM Faculty of Science Report 2005

Table 11: Namibia Publications 200-2004¹⁹

1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
3	24	32	33	48	50	24	48	47	24	38	371

Source: Institute for Scientific Information (ISI)

Fig 11: Publication output – Namibia 1994 -2004



The University of Namibia is to a large extent a teaching university with low staff numbers and there is almost no R&D that is taking place and this is evident in the low numbers of publications during the period 2005 –2006 (Table 12).

When one looks at the national R&D picture, UNAM seems to play comparatively a major role when it comes to publication output followed far behind by the DRF and the Geological Survey.

A brief analysis of the ISI report (1994 – 2004) indicates that there is a fair amount of collaboration between Namibia R&D institutes with their international counterparts. Most of them are found in South Africa and Germany, an indication of the strong historical links between Namibia and these two countries. The USA and England play a second major role after SA and Germany. On a regional basis, European institutes seem to be the most favoured, followed by African institutes and the Americas.

Table 12: International Collaboration 1994-2004 as cited by ISI

Germany	71	Denmark	6	Sudan	2	Sweden	3
South Africa	75	Italy	2	Tanzania	3	Kenya	4
England	27	Switzerland	3	Scotland	7	Canada	6
USA	38	Cameroon	1	Mozambique	2	Malawi	2
Israel	5	Zambia	4	Zimbabwe	3	Angola	2
France	18	Norway	6	Australia	8	Brazil	2

Source: Institute for Scientific Information

The numbers indicate co-authored publications

3.5.2 Patents

Namibia has its own guidelines on how to register patents in that country published by the Ministry of Trade & Industry and is a member of African Regional Intellectual Property Organization (ARIPO).

According to the Patent Technology Monitoring Branch of USPTO – EIPD (pre-1992 – December 2005 period), there is one patent that was granted to Namibia in 2000. This is understandable, if one considers the low level of RSTD in Namibia.

3.5.3 Recent technological development and emerging technologies

3.5.5.1 Information and Communication Technology (ICT)

Seizing upon the opportunity offered by ICT advances, the Namibian Parliament, with assistance from the National Democratic Institute for International Affairs (NDIIA), designed a website that enables citizens and civil society to track legislation, communicate with Parliamentarians, and engage in "chat room" dialogues on topics of current interest.

After learning many lessons from pilot ICTs in education projects and reviewing local and international experiences, the Namibian MOE worked with partners across the sector to develop the ICT Policy for Education in 2005 and the Implementing Plan in 2006²⁰, a comprehensive framework detailing all planned ICT interventions across the education sector.

At higher education level, both the university (UNAM) and polytechnic (PON) have relatively good IT student enrolments and there is a strong ICT capacity within both institutions.

3.5.5.2 Indigenous Knowledge Research

The Faculty of Science at UNAM²¹ is involved in:

- Isolation of insect pathogenic fungi from ticks infesting cattle for use in biological control of ticks and determination of cheap indigenous substrates for mass culture of the fungus.
- Evaluation of the quality characteristics of some plants and the optimization of conditions for the production of arachidonic acid by one of these plants.

²⁰ Namibia MOE: ICTs in Education Implementation Plan Guide
²¹ UNAM Faculty of Science Report 2005

- Biotechnology

As party to the Convention on Biological Diversity and the United Nations Conference on Environment and Development, Namibia is obliged to control biotechnology applications that may harm its biological diversity.

The Namibia Biotechnology Alliance was established to develop a Bio-safety framework and Biotechnology Policy for Namibia.

The objectives of the national policy and legislation for the safe use of biotechnology in Namibia are:

- To establish a permanent participatory planning process, to feed into regulatory decision-making on biotechnology for the promotion of sustainable development.
- To support the development of regulatory capacity and common measures and criteria by which to evaluate, test monitor and control biotechnology applications, their risks and impacts in accordance with agreed bio-safety guidelines.
- To support the development of research and industrial capacity to safely apply biotechnology techniques for the enhancement of Namibia's socio-economic and environmental well-being.
- To provide an institutional framework for the decision-making and international cooperation in this area.
- To provide appropriate mechanisms for the benefit sharing and transfer of technology.

The Faculty of Science at UNAM established a GMO Testing, Training and Research Laboratory and is currently at the setting-up phase. Two of its technicians have undergone training at CSIR (SA). Additionally, there is molecular genetic research that is in progress. The lab is also still adapting GMO testing protocols for optimum results in the local conditions.

3.5.5.3 *Energy*

As one of its projects, the MRCC's S & T division at UNAM has a program on Energy Research and Development whose aim is to develop Solar Engineering Technologies & Products. Their AccuPower project produced the Power Can, which is portable, antitheft, sustainable, accessible to the poor and powered by sunshine; solar engineering lab at UNAM and solar energy distribution centre to neighbouring households.

The DRFN's Energy Desk has a program on renewable energy and is using an Energy Demonstration Trailer, a fully functional "solar household" to promote the benefits of renewable energy.

The Biomass Energy Management Program of the Ministry of Mines and Energy is involved the in the production of fuel-efficient stoves. These stoves have the potential of greatly reducing the use of firewood for cooking.

3.5.5.4 *Environment*

The DRFN's EEAN division is involved in the following activities:

- Ecological Survey and Environmental Profile of Katima Mulilo.
- Pre-feasibility Study of Proposed Port at Cape Fria
- Angra Fria Environmental Assessment.
- Environmental Assessment of Proposed Kudu Gas Power Station and associated Power lines.

The United Nations University/UNESCO Zero Emission Research Initiatives (ZERI) Africa Chair at UNAM is involved in the following projects:

- Sorghum Brewery Project, where brewery waste is used for piggery and mushroom cultivation
- Fish Farming
- Biogas Production
- Seaweed Farming
- Poultry
- Utilization of various medicinal products

3.6 *Innovation strategies*

3.6.1 *Programs and initiatives to promote Innovation*

3.6.1.1 *Science Technology Innovation Policy*

1. The objectives of the S & T innovation policy are:
2. To build and strengthen the national S & T capacity (human, institution and enterprise) in order for it to be able to organise, motivate and carry out investigative research; appraise, develop, adapt and promote technologies and processes that are appropriate to Namibia; and propagate the benefits and results of scientific investigations and outcomes for their best technological applications.
3. To promote strong national consciousness and commitment to preserve Namibia's rich and diverse ecology and the natural habitat; to maximally harness resources; and manage and protect its fragile environment.
4. To advance to the extent possible, indigenous small and medium scale enterprises and help them to link up with larger firms nationally and regionally so that both groups can develop synergy and new culture for efficient production of high value added goods and services and sustained thrust toward continuous innovation.
5. To promote gender sensitivity and balance in developing, using and apply science and technology and to promote full participation and integration of women at all levels and stages.
6. To enhance additional and homegrown technologies used in small, micro and informal sectors; and assist firms and entrepreneurs to acquire, adopt and apply these technologies.
7. To establish and operate an up to date S & T information exchange service and stimulate the development of local area S & T databases both regionally and nationally for access by producers, traders, teachers and students.
8. To increase retention of trained and qualified technicians and scientific personnel.
9. To enhance productivity and innovation in new products, processes, publications and patents.

3.7 Concluding remarks

The Namibian Government has now recognized that S&T is an essential component in the development of Namibia's economy. However, the current S&T infrastructure in the country is weak and needs consistent and extensive emphasis. There is a shortage of human resources for S&T which places a huge responsibility on the capacity of the only university in the country- the University of Namibia. It is also evident that the very low spending of R&D by government and the business sector will need to be turned around, before the very ambitious aims and goals of the national S&T policy will materialize.

4. References

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Faculty of Science Annual Report, 2005

Polytechnic of Namibia Prospectus 2006

UNESCO S & T Indicators

Ministry of Education: ICTs in Education, Implementation Plan & Guide

DRFN Annual report, 2005 – 2006

Human Development Report 2006

Useful websites

www.mof.gov.na

www.uis.unesco.org

www.uspto.gov

<http://hdr.undp.org>

www.drfn.org.na

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