

IMPLEMENTATION PLAN



REPUBLIC OF NAMIBIA

OF
THE NATIONAL PROGRAMME ON
RESEARCH, SCIENCE, TECHNOLOGY
AND INNOVATION

(NPRSTI)



2014/15 to 2016/2017



*“Transforming
Namibia towards
a knowledge-based
society”*



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LIST OF ACRONYMS AND ABBREVIATIONS

ASO	Agriculture Scientific Officer
AVA	Africa VLBI Network
BIOTA	Biodiversity Monitoring Transect Analysis
BIPA	Business Intellectual Property Agency
BRAHMS	Botanical Research And Herbarium Management System
CBERS	China-Brazil Earth Resources Satellites
CRAN	Communications Regulatory Authority of Namibia
CTA	Cherenkov Telescope Array
CTBTO	Comprehensive Nuclear-Test-Ban Treaty Organizations
DART	Directorate of Agriculture, Research and Training
DEES	Directorate of Agriculture Production, Extension and Engineering Services
DRST	Department of Research, Science and Technology
DST	Department of Science and Technology
ETEAs	Emerging Tourism Enterprises Association's
FENATA	Federation of Namibian Tourism Associations
FRST	Foundation on Research, Science and Technology
GDP	Gross Domestic Product
GRTC	Gobabeb Research and Training Centre
GSN	Geological Survey of Namibia
GSNL	Greater Sossusvlei-Namib Landscape
HAN	Hospitality Association of Namibia
HCD	Human Capacity Development
HEIs	Higher Education Institutions
HESS	High Energy Stereoscopic System
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Virus
HPC	High Performance Computing
ICT	Information and Communication Technology
IKS	Indigenous Knowledge System
IKSC	Indigenous Knowledge System Council
IPR	Intellectual Property Rights
IRLUP	Integrated Regional Land Use Plan
IT	Information Technology
IUM	International University of Management
IWRM	Integrated Water Resources Management
KNP	Kalahari Namib Project
LDN	Land Degradation Neutrality
M&E	Monitoring & Evaluation
MAWF	Ministry of Agriculture, Water and Forestry
MET	Ministry of Environment and Tourism
MFMR	Ministry of Fisheries and Marine Resources



MHETI	Ministry of Higher Education, Training and Innovation
MICT	Ministry of Information and Communication Technology
MIT&SMED	Ministry of Industrialisation, Trade and SME Development
MLR	Ministry of Land Reform
MME	Ministry of Mines and Energy
MOAs	Ministries, Offices and Agencies
MOE	Ministry of Education, Arts and Culture
MOF	Ministry of Finance
MOHAI	Ministry of Home Affairs and Immigration
MOHSS	Ministry of Health and Social Services
MoU	Memorandum of Understanding
MURD	Ministry of Urban and Rural Development
NAMWATER	Namibia Water Corporation
NARIS	Natural Resources Information System
NBRI	National Botanical Research Institute
NCA	Northern Communal Area
NCA	Northern Communal Areas
NCRST	National Commission on Research, Science and Technology
NDP4	Fourth National Development Plan
NEACB	National Examination Assessment and Certification Board
NEI	Namibia Energy Institute
NHRDC	Namibia Human Resource Development Programme
NIPSS	National Institute for Policy and Strategic Studies
NMA	Namibia Manufacturing Association
NNF	Namibia Nature Foundation
NPC	National Planning Commission
NPRSTI	National Programme on Research, Science, Technology and Innovation
NQA	Namibia Qualifications Authority
NSA	Namibia Statistics Agency
NSBA	Namibia Stud Breeders Association
NSFAF	Namibia Students Financial Assistance Fund
NTGDS	National Tourism Sustainable and Growth Strategy
NUST	Namibian University of Science and Technology
NWR	Namibia Wildlife Resorts
OPM	Office of the Prime Minister
OMA	Offices, Ministries & Agencies
PAISA	Pan-African Institute for the study of African
PETROFUND	Petroleum Training and Education Fund
PhD	Doctor of Philosophy
R&D	Research & Development



RST	Research, Science and Technology
RSTI	Research, Science, Technology and Innovation
RTC	Research and Training Centre
SADC	Southern African Development Community
SASSCAL	Southern African Science Services Centre for Climate Change and Adaptive Land Management
SANBI	South African National Biodiversity Institute
SEMP	Strategic Environmental Management Plan
SKA	Square Kilometre Array
SMEs	Small and Medium Enterprise
SOP	Standard Operation Procedures
STI	Science, Technology and Innovation
TFCA KAZA	Kavango-Zambezi Transfrontier Conservation Area
TIA	Technology Innovation Agency
UCT	University of Cape Town
UNAM	University of Namibia
UNFPA	United Nations Population Fund
VCF	Veterinary Cordon Fence
WHO	World Health Organization



1. INTRODUCTION

1.1 Purpose

This implementation plan presents the national annual strategic plan of the National Programme on Research, Science, Technology and Innovation (NPRSTI) 2013/14 -2016/17 as mandated under Section 18 of the Research, Science and Technology Act of 2004 (Act no. 23 of 2004). The implementation plan was developed in consultation with various institutions for the purpose of developing annual plans for execution during the remaining period of the fourth National Development Plan (NPD4). The major objectives of the NPRSTI are:

- Enhance coordination, thus increasing efficiency in resource use;
- Facilitate scientific human and institutional capacity building;
- Ensure sustained financing of priority research and development projects; and
- Promote science as a preferred area of study.

1.2 Programme Overview

The National Programme on Research, Science, Technology and Innovation (NPRSTI) identified Namibia's research priorities areas for investment in science, technology and innovation. The proposed research areas in the NPRSTI cut across several sectors and include health, agriculture and fisheries, water, energy, geology and mining, indigenous knowledge, social sciences and humanities, logistics, environment and tourism, as well as areas addressing enabling technologies such as manufacturing technologies, information and communication technology, bio-technology and space science.

The NPRSTI concentrates on increasing science and technology financing, building research capacity, technical skills, strengthening research, the development of infrastructure, creating an enabling policy and regulatory environment, promoting public understanding of science and technology as well as establishing and strengthening national, regional and international collaboration between stakeholders in Research, Science, Technology and Innovation (RSTI).

Several requirements for the effective implementation of the NPRSTI include the provision of adequate funding; appropriate and efficient institutions; the establishment of monitoring mechanisms, as well as trained and competent research staff.



2. IMPLEMENTATION MODALITIES

2.1 Description of the implementation Plan

The NPRSTI implementation plan was developed in consultation with stakeholders from the private, public, non-governmental organisation (NGO) sectors and civil society in order to document the research and innovation technology activities, projects, allocation of resources, targets, milestones and indicators. Table 1 provides a list of institutions consulted during the development of the implementation plan of the NPRSTI.

Table 1: Stakeholders consulted for the NPRSTI Implementation Plan

Research Priority Area	Institution	Research Priority Area	Institution	
Agriculture	MAWF	Information and Communication Technology	OPM	
	NSBA		UNAM	
Biotechnology	UNAM	Logistics	NAMPORT	
Energy	MME	Manufacturing Technology	NUST	
	PetroFund		NPC	
	UNAM		UNAM	
Environment and Tourism	MET	Mining	MME	
	UNAM		MMTI	
Fisheries and Marine Resources	MFMR		Social Sciences	UNAM
	MOF	NCRST		
	UNAM	NSA		
Geoscience	MME	PAISA		
	GSN	NSA		
	PetroFund	UNAM		
	UNAM	UNICEF		
	GRTC			
Health	NPC	Space Science		NUST
	MOHSS	Water		UNAM
	NUST		DRFN	
	UNICEF		GRTC	
	NAMWATER			
Indigenous Knowledge	UNAM		NUST	
	PAISA		SASSCAL	
	MBE			
	NIKSC			



2.2 Implementation Schedule

Tables 3 - 22 provide the implementation plan of the NPRSTI and contains annual plans with detailed national RSTI projects and activities, targets and a three (3) year budget as guided by the mandates and primary responsibilities of the respective Offices, Ministries and Agencies (OMA's), private sector institutions and civil society organizations. The execution of projects and activities is the responsibility of the designated institutions for each project and activity in the implementation plan of 2014/15-2016/17. The National Commission on Research Science and Technology (NCRST) in consultation with the National Planning Commission (NPC) will coordinate, monitor and evaluate the implementation of the NPRSTI overseen by the National Steering Committee¹.

3. MONITORING AND EVALUATION

The NCRST developed the Monitoring and Evaluation (M&E) plan for the NPRSTI according to NPC's M&E manual of 2015. The M&E plan for the NPRSTI serves as a tool to plan and manage the process of monitoring, evaluating and reporting on progress made on the implementation of the programme. The M&E plan is utilised in conjunction with other tools such as the NCRST strategic plan and NDP 4 implementation plan. The M&E plan serves the following functions:

- Explains in detail how and what will be monitored for the various research priority areas and activities to determine whether the lead institutions are implementing the identified research activities and utilising resources/budget as per the implementation plan;
- Serves as a guide for programme implementation and management, and as a communication tool that allows NCRST and other stakeholders to understand the strategic initiative's desired outcome, the envisaged objectives of the NPRSTI and progress made towards those objectives during the implementation process;
- Provides data and information to support decisions during the preparation of the next programme.

3.1 Monitoring

To monitor progress made towards achieving the desired outcomes and targets expected of the programme, the monitoring plan outlines how NCRST will track performance against indicators and targets covering programme activities. In order to track progress and performance through all phases of implementation, the institution responsible for each initiative is expected to produce annual follow-up reports and take charge of analysing and identifying significant effects and changes from those outlined in the implementation plan, which anticipates foreseen outcomes, indicators and resources for the strategic

¹ The National Steering Committee is a multi-sectoring body comprising of representative from the public and private sector, academia and research institution as well as civil society and chaired by the Chief Executive Officer of the NCRST.



initiative. NCRST will produce annual programme monitoring reports with qualitative and quantitative information relating to the individual progress of each strategic initiative and project.

3.2 Evaluation

Monitoring the programme indicators will provide stakeholders with clear information about what is achieved within a particular year of implementation, therefore, the evaluation of the programme will be conducted at the end of 2016/2017 to provide assessment of results, deviations in plans and the effects thereof, programme management and the sustainability of the strategies to achieve the programme objectives. NCRST will dispatch the M&E plan template (see tables 23 and 24) for data collection during the evaluation process.

3.3 Reporting

In accordance with the M&E plan of the NPRSTI, the NCRST is responsible for drafting and submitting quarterly reports and annual reviews to the national oversight entities, namely, the NPC and the Ministry of Higher Education, Training and Innovation (MHETI) on the progress made toward the implementation of the programme and its contribution to the overall attainment of the goals of NDP4.

3.4 Finance and Resources

Table 2 provides the costing and allocation of funds by OMA's, the private sector, non-governmental organisations and international development partners to priority research areas for 2014 to 2017, and contains both committed and non-committed funds. A total of N\$ 1,049 billion is required to finance the projects/activities under the priorities research areas detailed by the NPRSTI (2014 -2017). Of the required funding, N\$ 880 million is committed by the implementing institutions and N\$ 165 million is required from external sources.



Table 2: Budget (N\$) for priority research areas for the NPRSTI 2013/14 -2016/17

Research Priority Areas	Input/ budget 2014/15 in N\$	Input/ budget 2015/16 in N\$	Input/ budget 2016/2017 in N\$	Input/ budget in N\$ for 3 year period	Funds committed by implementing institutions in N\$	Funds required from external sources in N\$
Health	10 324 433	12 467 482	13 034 025	35 825 940	13 544 450	22 281 490
Agriculture	13 565 612	16 831 304	15 084 136	45 481 052	45 481 052	0
Fisheries	753 951	1 945 562	3 434 032	6 133 545	5 183 545	950 000
Water	4 285 683	17 652 378	16 086 588	38 024 649	12 519 649	25 505 000
Energy	342 300 000	17 298 000	1 883 000	361 481 000	359 581 000	1 900 000
Geosciences	3 600 000	7 111 000	21 455 000	32 166 000	19 346 000	12 820 000
Mining	931 820	923 050	1 100 000	2 954 870	2 954 870	0
Indigenous Knowledge	755 000	1 909 000	1 668 000	4 332 000	2 966 000	1 366 000
Social Science and Humanities	16 140 000	88 610 000	28 455 000	133 205 000	132 415 000	790 000
Logistics	0	50 000 000	61 550 000	111 550 000	44 000 000	67 550 000
Environment and Tourism	7 987 884	115 008 272	6 759 394	129 775 550	128 475 550	1 300 000
Manufacturing Technologies	150 000	2 235 000	3 765 000	6 150 000	3 345 000	2 805 000
Information and Communication Technology	9 229 000	7 240 000	13 107 000	29 576 000	28 226 000	1 350 000
Biotechnology	120 000	997 500	800 000	1 917 500	1 917 500	0
Space Science	18 882 531	35 011 276	56 207 000	110 100 807	83 335 807	26 765 000
Total	429 025 914	375 239 823	244 388 175	1 048 653 913	883 291 423	165 382 490



**STRATEGIC PRIORITY 1: CREATING AN ENABLING
POLICY AND REGULATORY ENVIRONMENT REQUIRED
TO FRAME AND SUPPORT THE SCIENCE AND
TECHNOLOGY DEVELOPMENT**

SPECIFIC OBJECTIVES:

1. Facilitating an enabling regulatory environment
2. Set research priorities in strategic areas to contribute to national development ensuring adequate and sustainable funding to support RSTI development

DESIRED OUTCOME:

By 2017, Namibia has developed a policy and regulatory environment that encourages science and technology development, supported by increase investment in RSTI to 0.3% of GDP in RSTI to 0.3% of GDP

4.1 Implementation Schedules (table 3-22)

Table 3: STRATEGIC PRIORITY 1: CREATING AN ENABLING POLICY AND REGULATORY ENVIRONMENT REQUIRED TO FRAME AND SUPPORT THE SCIENCE AND TECHNOLOGY DEVELOPMENT

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data Sources	Institution responsible for implementation & reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
Develop and review policies and legal framework	N\$ 1 407 855: Value of Consultancy Contract signed for Policy Review and Development; Staff time	Revise current RST Policy to formulate new STI Policy	% progress made to revise the National STI policy	NCRST Project Report; Revised National STI Policy	NCRST	Annual	RST Policy of 1999	100% STI Policy developed	1 300 000
		Revised RST Act no. 23 of 2004 and Regulation of 2011	% progress made to revise the RST Act no. 23 of 2004 and Regulation of 2011	NCRST Project Report; Amended RST Act no. 23 of 2004	NCRST	Annual	0	100% Work completed on the amendment of the RST Act no. 23 of 2004	1 005 000
Understand a thorough mapping exercise of the research and innovation system	N\$ 20 000: Value of stakeholders mapping; Staff time	National Research Ethics Policy	% progress made to develop the National Research Ethics Policy	NCRST Project Report; National Research Ethics Policy	NCRST	Annual	Institutional Research Ethics Policy	100% National Research Ethics Policy developed	250 000
		Institutional IP Policy	% progress made to develop an Institutional IP Policy	NCRST Project Report; Institutional IP Policy	NCRST	Annual	0	100% Institutional IP Policy developed	250 000
		IKS Policy	% progress made to develop the IKS Policy	NCRST Project Report; IKS Policy	NCRST	Annual	0	100% National IKS Policy developed	750 000
		Mapping of RSTI stakeholders	% progress made on RSTI stakeholders mapping	RSTI Stakeholders Database	NCRST	Annual	2010 R&D Survey Database	100% Work completed on the development of a database of RSTI Stakeholders	20 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data Sources	Institution responsible for implementation & reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
Establishment of the STI indicators and data-gathering procedures	N\$ 2 700 000: Value of Consultancy Contract signed to conduct R&D and Innovation Survey; Staff time	Annual R&D survey in collaboration with NSA	% progress made to conduct the National R&D survey	NCRST Project Report; STI Indicators Report	NCRST	Annual	R&D Report of 2010	100% National STI Indicator Report developed	2 000 000
		Biennial or periodical Innovation survey in collaboration with NSA	% progress made to conduct the National Innovation Survey	NCRST Project Report; STI Indicators Report	NCRST	Annual	0	100% National STI Indicator Report produced	700 000
Establishment of a STI national platform and an information management system	N\$ 3 500 000: Value of Consultancy Contract signed to develop and establish the STI Information Management System; Staff time	National STI Information Management System	% progress made on development and establishment of STI Information Management System	NCRST Project Report; National STI Information Management System	NCRST	Annual	0	100% Work completed to establish a functioning STI Information System	3 500 000
		Identifying research activities to develop the NPRSTI Implementation Plan (2014/15 to 2016/17)	% progress made to develop the NPRSTI Implementation Plan (2014/15 to 2016/17)	NCRST Project Report; NPRSTI Implementation Plan (2014/15 to 2016/17)	NCRST	Annual	0	100% NPRSTI Implementation Plan (2014/15 to 2016/17) developed	400 000
Development and implementation of national research priorities	N\$ 800 000; Staff time	Development of M&E Plan for the NPRSTI (2014/15 to 2016/17)	# of NPRSTI M&E reports	NCRST Project Report; NPRSTI M&E reports	NCRST	Annual	0	100% Work completed on the M&E reports for NPRSTI (2014/15 to 2016/17)	200 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data Sources	Institution responsible for implementation & reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		Development of M&E Plan for the NPRSTI (2014/15 to 2016/17)	# of NPRSTI M&E reports	NCRST Project Report; NPRSTI M&E reports	NCRST	Annual	0	100% Work completed on the M&E reports for NPRSTI (2014/15 to 2016/17)	200 000
		Development of the second NPRSTI for 2017/18 to 2021/22	% progress made to develop the second NPRSTI for 2017/18 to 2021/22	NCRST Project Report; Second NPRSTI 2017/18 to 2021/22	NCRST	Annual	First NPRSTI for 2014/15 to 2016/17	100% Work completed on the development of the Second NPRSTI for 2017/18 to 2021/22	200 000
Set up stable financing and procedures to manage the RST Fund	N\$1 550 000; Staff time	Establish and implement the grant management rules and procedures	% progress made to establish and implement grant management rules and procedures	NCRST Project Report; Grant management rules and procedures	NCRST	Annual	0	100% Work completed to establish and implement a grant management rules and procedures document	500 000
		Establish the operational and management rules and procedures for the RST Fund	% progress made to establish the operational and management rules and procedures of the RST Fund	NCRST Project Report; Operational and management rules and procedures and M&E report	NCRST	Annual	Financial Management Policy 2014	100% Work completed to establish operational and management rules and procedures document	550 000



STRATEGIC PRIORITY 2: BUILDING RESEARCH CAPACITIES, INFRASTRUCTURE AND TECHNICAL SKILLS WHILE CREATING RESEARCH GROUPS WITH A CRITICAL MASS TO GUARANTEE THE STRENGTH AND SUSTAINABILITY OF THE RESEARCH AND INNOVATION SYSTEM

SPECIFIC OBJECTIVES:

1. Building human resources capacity and ensure alignment to support RSTI development while consolidating and qualifying research management
2. Develop a national strategy for RSTI infrastructure ensuring stakeholder's access

DESIRED OUTCOME:

By 2017, Namibia is characterised by a national system of innovation with adequate human resources (up to 500 research, FTE, producing 20 PhD graduates in STI annually) and research and innovation infrastructure.

Table 4: STRATEGIC PRIORITY 2: BUILDING RESEARCH CAPACITIES, INFRASTRUCTURE AND TECHNICAL SKILLS WHILE CREATING RESEARCH GROUPS WITH A CRITICAL MASS TO GUARANTEE THE STRENGTH AND SUSTAINABILITY OF THE RESEARCH AND INNOVATION SYSTEM

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
Strengthening of RSTI training at all levels of Namibia's education system	N\$ 154 000 000	Revision and approval of senior primary and junior secondary syllabus by NEACB	# of phase syllabi approved by NEACB	NEACB Minutes	MOE	Annual	Curriculum revision 2009	3 Syllabi approved by NEACB	154 000 000
Develop a support framework for post-graduate and doctoral education	N\$ 12 000 000; Staff time	Develop and sign an MoU between NCRST & NSFAP	% of progress made on signing of an MoUs	NCRST Annual Report	NCRST; NSFAP	Annual	0	100% Work completed on signed MoU	3 000 000
			# of joint funding calls					1 Joint PhD and MSc funding calls	
Development of research units as well as training of research technicians and experts	N\$750 000	NCRST funding calls for postgraduates	# of funding calls	NCRST Annual Report	NCRST	Annual	0	2 PhD and MSc calls	9 050 000
		Establishment of Research Chairs	# of Research Chairs established	NCRST Project Report	NCRST	Annual	0	1 Research Chair established	
Conduct a needs analysis for access to RSTI infrastructures	N\$ 150 000; Staff time	Conduct needs analysis for access to RSTI infrastructures	% progress made to conduct needs for access to RSTI infrastructures	Report on the status of National RSTI infrastructure	NCRST	Annual	0	100% Work completed on National RSTI infrastructure audit report	150 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
Earmark funding to finance the construction and upgrade of research infrastructures	N\$ 53 000 000; Value of consultancy contract signed for the construction of RSTI infrastructures; Staff time	Allocate Development Budget for the construction and upgrading of RSTI infrastructures	% of funds disbursed/ invested in construction and upgrading of RSTI research infrastructures	As per the development budget of the NCRST	NPC	Annual	0	100 % Total of funds mobilized for upgrading of existing infrastructures and construction of new infrastructures in phases	53 000 000
Policy of 'open access' to infrastructure as well as networking laboratories and libraries	N\$ 500 000; Staff time	Adoption of a policy of open access and setup open access repositories	% progress made on improved access and optimal utilization of R&D infrastructure	NCRST Report	NCRST	Annual	0	100% R&D infrastructure utilized	500 000



STRATEGIC PRIORITY 3: PROMOTING COOPERATION IN RESEARCH AND INNOVATION ACTIVITIES RESULTING IN AN IMPROVED RESPONSE TO ECONOMIC

SPECIFIC OBJECTIVES:

1. Establish the required partnerships and strengthen cooperation in research and innovation activities
2. Promote regional and international cooperation

DESIRED OUTCOME:

By 2017 collaboration with other companies and public research institutions has increased to the desired level of 45% with targeted institutions 0.3% of GDP

Table 5: STRATEGIC PRIORITY 3: PROMOTING COOPERATION IN RESEARCH AND INNOVATION ACTIVITIES RESULTING IN AN IMPROVED RESPONSE TO ECONOMIC AND SOCIAL CHALLENGES

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
Strengthening of NCRST capacity to effectively coordinate the development and implementation of STI policies and programs	N\$ 20 000; Staff time	Coordinate establishment of linkages between institutions in the identified national priorities	% of progress made to increase collaboration between institutions to jointly implementing initiatives in the identified national priorities	NPRSTI (2014/15 to 2016/17)	NCRST	Annual	0	100% Increased collaboration between institutions in the identified national priorities	20 000
Strengthen collaboration with regional and international institutions	N\$ 200 000; Staff time	Development of a guiding framework and a process of effective engagement of suitable countries	# of MoUs between NCRST and regional & international institutions	NCRST Annual Report	NCRST	Annual	0	3 MoU between NCRST and regional & international institutions	100 000
Invest in targeted bilateral cooperation efforts	N\$ 6 500 000 Staff time	Bilateral research calls and agreement actions	# of bilateral calls	NCRST Annual Report	NCRST	Annual	0	60% MoU implemented	100 000
							First and second bilateral calls from MoE, Directorate: Higher Educations	2 Bilateral calls	6 000 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		Development of Space Science Strategy	% progress made to develop the Space Science Strategy	NCRST Project Report			0	100% Space Science Strategy developed	500 000
		Establishment of Technology Stations	% progress made to establish Technology Stations	NCRST Annual Report			0	20% work completed on the establishment of Technology Stations	0
Consolidate communities of Namibian RSTI professionals in foreign countries	N\$ 3 500 000	Research call for Namibian researcher at international or foreign institutions	# of research proposals funded	NCRST Annual Report	NCRST	Annual	0	1 Networks of cooperation and access to investment, training and expertise globally in RSTI	3 500 000



STRATEGIC PRIORITY 4: DISSEMINATING SCIENTIFIC AND TECHNOLOGICAL KNOWLEDGE

SPECIFIC OBJECTIVES:

1. Public support for research results
2. Promote public awareness on the importance of RSTI

DESIRED OUTCOME:

By 2017, Namibia 's output in research has significantly increased from the current level to at least 2000 publications per annum

Table 6: STRATEGIC PRIORITY 4: DISSEMINATING SCIENTIFIC AND TECHNOLOGICAL KNOWLEDGE

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
Promote the dissemination and publication of research results	N\$ 3 000 000; Staff time	Hosting research symposium;	# of symposium hosted	NCRST Annual Report	NCRST	Annual	0	2 Research symposiums hosted	3 000 000
		Publishing of research output	# of research output published					1000 Scientific publications by researchers in local and international journals	
Establish a reward and recognition system for RSTI achievers and achievements	N\$ 2 600 000; Staff time	Develop operational guide for RSTI awards system	% progress made to establish operational guide for RSTI award system	NCRST Annual Report	NCRST	Annual	Recognition System developed - DRST 2004	100 % RSTI reward and recognition system established	2 700 000
Develop and implement programmes targeting the public about the importance of the RSTI to economic development	N\$ 18 250 000; Staff time	Carry out a need analysis to develop and implement programmes	% progress made to develop and implement programmes	Data analysis report; Programme documents	NCRST	Annual	0	100% Awareness programmes established	370 000
Develop and implement specific programmes aimed at politicians and specific decision-makers in communities	N\$270 000; Staff time	Lobby parliamentary to support RSTI	# of lobbying activities for Parliamentary Standing Committee on ICT & Innovation	NCRST Annual Report	NCRST	Annual	0	3 Programmes targeting politicians and specific decision-makers established to lobby ICT and Innovation Parliamentary Standing Committee	270 000



STRATEGIC PRIORITY 5: PROMOTING INNOVATION IN THE ECONOMIC AND SOCIAL SECTORS

SPECIFIC OBJECTIVES:

1. Promote the transfer of knowledge for end-users
2. Provide the basic resources for innovation

DESIRED OUTCOME:

By 2017, Namibia 's innovation output has increased, in that 20 patents are filed by residents annually and high-tech exports makes up 10% of manufacturing export

Table 7: STRATEGIC PRIORITY 5: PROMOTING INNOVATION IN THE ECONOMIC AND SOCIAL SECTORS

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
Promotion of private – public research cooperation projects	N\$ 2 500 000 Staff time	Promote private-public research cooperation projects	% of progress made to establish specified partnerships	NCRST Annual Report	NCRST	Annual	0	100% Co-creation projects between University students and companies either locally and internationally	2 500 000
Promote the application and commercialization of results and products of research	N\$ 1 250 000 Staff time	Develop technology transfer programme	# of projects supported through technology transfer programme	NCRST Annual Report	NCRST	Annual	0	4 Projects to be supported to develop technology	500 000
Promotion of technology services and innovation networks	N\$ 5 500 000 Staff time	Host and participate in dragon's den (pitch)	# of dragon's den hosted and attended	NCRST Annual Report	NCRST; Other Institutions	Annual	0	3 Host dragon's den (pitch)	5 500 500
Facilitating the establishment of technology enterprises	N\$ 860 000 Staff time	Supporting entrepreneurs with formulation and certification of their products & services	# of products & services formulated and certified as result of each R&D output	NCRST Annual Report	NCRST	Annual	0	2 Products & services formulated and certified as result of each R&D output	860 000
Develop a framework to support industry fellowships and a knowledge transfer partnerships scheme for students at all levels	N\$ 200 000 Staff time	Develop a knowledge-transfer strategy	% progress made to develop knowledge transfer strategy	NCRST Annual Report	NCRST	Annual	0	100% Knowledge transfer strategy developed	200 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
Financial incentives for innovation	Staff time	Investigating potential incentives scheme for Innovation	% progress made to identify and implement innovators incentive scheme	NCRST Annual Report	NCRST	Annual	0	50% Policy on innovation incentive developed	0
Establishing of the Innovation Hub	N\$ 5 000 000	To establish an Innovation Hub	% progress made to establish the Innovation Hub	NCRST Annual Report	NCRST	Annual	0	100% Work completed on establishment of an Innovation Hub	5 000 000



PRIORITY RESEARCH AREA 1: HEALTH

SPECIFIC OBJECTIVES:

To conduct research to offer solutions to HIV/AIDS, cancer and tuberculosis patients as well as in their environments (nutrition, poverty and crowding) and translation of research findings into clinical and other healthcare fields which directly contribute to reduced health inequality

DESIRED OUTCOME:

By 2017, Namibia has developed the research capacity to support access to quality healthcare systems both in terms of prevention, cure and rehabilitation, characterised by an improvement in health and an adjusted life expectancy from baseline 57 to 59

Table 8: PRIORITY RESEARCH AREA 1: HEALTH

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
I(a) Support biomedical research in communicable and non-communicable diseases in the areas of prevention, diagnosis, therapy and management	N\$ 15 515 427	1) WHO STEPs Survey on prevalence of non-communicable diseases (NCDs) and risk factors	% of work completed on biomedical research on WHO STEPs Survey on non-communicable diseases	Quarterly, Annual and Project Reports	MOHSS	Annual	2004: 5 STEPs Survey on Non-Communicable Diseases (NCDs)	100% Report on biomedical research on WHO STEPs for Non-communicable Diseases	7,500,000
		2) African Survey on the Prevalence of Alcohol and Drugs (ASPAD)	% of work completed on biomedical research on ASPAD	Quarterly, Annual and Project Reports	MOHSS	Annual	0	100% Report on Prevalence of Alcohol and Drugs (ASPAD)	419,450
		3) National Survey on the Prevalence of Suicide in Namibia	% of work completed on biomedical research for the Survey on Prevention of Suicide	Quarterly, Annual and Project Reports	MOHSS	Annual	0	100% Report on the Prevalence of Suicide in Namibia	1,600,000
		4) Research on Foetal Alcohol Spectrum Disorder (FASD)	% of 2014 to 2017 targets completed on biomedical research in FASD completed	Quarterly, Annual and Project Reports	MOHSS	Annual	0	100% Report on the Foetal Alcohol Spectrum Disorder (FASD)	35,000
		5) Investigate Namibian Demographic and Health Distribution	# of 2018 Namibia Demographic and Health Survey protocol developed and approved	Quarterly, Annual and Project Reports	MOHSS	Annual	2013 Namibia Demographic and Health Survey	1 2018 Namibia Demographic and Health Survey protocol developed and approved	5,000,000
		6) Research on economic impact of ARVs in Namibia	% of work completed on biomedical research on the economic impact of HIV in Namibia	Quarterly, Annual and Project Reports	MOHSS	Annual	2010 Research on Economic Impact of HIV in Namibia	100% Report on the economic Impact of ARVs in Namibia	460,977

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
I(b) Conduct research aimed at improving access, services and finance in the general healthcare delivery system	N\$ 13 360 513	1) National research on the inclusion of persons with disabilities at tertiary institutions of Namibia	# of postgraduate qualifications completed	Graduates Roll	UNAM	Annual	1 MSc 3 BSc Honours Project students	7 1 PhD, 2 MSc, 4 BSc Honours Project students	0
			# of peer review papers published	Peer Review Papers Published	UNAM	Annual	0	3 Peer reviewed papers	0
			% of work completed on the national research on the inclusion of persons with disabilities in tertiary institutions of Namibia	Quarterly, Annual and Project Reports	MOHSS	Annual	0	100% Report on the national research on the inclusion of persons with disabilities in tertiary institutions of Namibia disseminated	840,000
		2) Research on the living conditions of older persons and elderly abuse	% of work completed on data collection on the living conditions of older persons and elder abuse	Interim Project; Annual Reports	MOHSS	Annual	2004 Study on the living conditions of older People	100% Data collected on the living conditions of older persons and elder abuse	1,000,000
		3) Research on infant and young child feeding practices and care	% of work completed on research on infant and young child feeding practices and care	Quarterly, Annual and Project Reports	MOHSS	Annual	0	100% Report on infant and young child feeding practices and care produced	8,320,513

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		4) i. Active surveillance and malaria prevalence in Engela Constituency, Ohangwena, Namibia; ii. Malaria Case Management in the private and public health facilities of Omusati Region; iii. Investigation into the risk factors for malaria transmission in the Outapi and Oshikuku health districts of Omusati region; iv. Enhanced Disease Surveillance to Understand the Epidemiology of Malaria in Zambezi Region, and evaluate the effectiveness and feasibility of targeted parasite elimination	# of PhD graduates # of MSc graduates # of peer-reviewed papers	Graduates roll; Peer Review Papers Published	UNAM	Annual		2 PhD graduates 2 MSc graduates 3 Peer-reviewed papers	0 0 0
1(c) Promote and support research into natural product medicine including the commercialization of the research results	N\$ 1 340 000.00	1) In vitro assessment of anti-malarial activity of medicinal plants used by traditional healers for the potential treatment of malaria. 2) Phytochemistry and Microbiology of Traditional Fruits & Vegetables	# of PhD graduates # of MSc Student graduates # of BSc final year research projects,	Quarterly, Annual and Project Reports; Graduates Roll	UNAM	Annual	7 Research articles 1 Report	2 PhD graduates 4 MSc graduates	1,140,000 0
			# of BSC final year research projects, Vegetables	Quarterly, Annual and Project Reports	UNAM	Annual	3 MSc graduates	10 BSc final year research projects	0

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		<p>3) An investigation into the anti-neoplastic properties of Schinziophyton rauntaneneii and Colophospermum mopane; 4) Identification of bioactive plant compounds from indigenous plants with anti-malarial properties</p> <p>4) Development of novel anti-malarial treatments based on ethno-medicinal plants in the Zambezi region</p> <p>5) Phenolic compounds from Namibian indigenous vegetables</p> <p>6) A study of the in vitro mechanistic anti-tumour properties of indigenous plants from southern Namibia</p> <p>7) An investigation into the potential use of medicinal plant extracts for treatment of lower respiratory infections and diarrhoeal diseases</p> <p>8) The development and evaluation of a lipid-based nanoparticulate drug delivery system for antiproliferative extracts from medicinal plants</p>	# of peer-reviewed papers	Quarterly, Annual and Project Reports	UNAM	Annual	16 BSc Honours Project students	5 Peer reviewed papers published	0

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		9) Isolation and identification of bioactive compounds from natural marine organisms							
		10) The development and validation of high throughput screens for drug discovery from medicinal plants							
		11) The development of a plant based toothbrush sanitizer							
		12) The development and validation of high throughput screens for drug discovery from medicinal plants							
		13) The development of a plant based toothbrush sanitizer							
		14) GeoAccess	% of work completed on geographical data collection, qualitative data collection, focus group discussions, key informant interviews	Quarterly, Annual and Project Reports	UNAM	Annual	0	100% Production of conference presentation; Map of accessibility; Policy briefings; 3 academic articles	200,000
		15) Research into phytochemistry of Namibian seaweeds and sponges	# of PhD graduates	Annual Reports; Scientific Journals; Graduates Roll	UNAM	Annual	0	1 PhD graduates	0
	# of BSc Hon graduates		5 BSc Honours					0	
	# of publications		6 Publications and conference proceedings					0	

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$	
1(d) Support telemedicine, diagnostic systems and improve patient electronic health records	N\$ 5 400 000	1) Research on logistics and algorithms to deliver healthcare telemedically 2) Study the implementation of patient electronic health care records	# of e-clinics	Quarterly, Annual and Project Reports	IUM	Annual	0	1 E-clinic	5,400,000	
			# of patients serviced by telemedicine					10 Patients serviced by telemedicine		0
			# of health providers utilising telemedicine					5 Health providers utilising telemedicine		0
1(e) A study on strategies for local authorities (political) and community leadership to address the public health risks of unhygienic conditions in the informal settlement communities of Windhoek, Opuwo and Walvis Bay	N\$ 210 000	1) A Study on Strategies for local authorities (political) and community leadership to address the public health risks of unhygienic conditions in the informal settlement communities of Windhoek, Opuwo and Walvis Bay	# of e-clinics; # of patients serviced by telemedicine; # of health providers utilising telemedicine	Quarterly, Annual and Project Reports	IUM	Annual	0	1 E-clinic 10 Patients serviced by telemedicine; 5 Health providers utilising telemedicine	210,000	



PRIORITY RESEARCH AREA 2: AGRICULTURE

SPECIFIC OBJECTIVES:

1. Improve the living standards in rural areas through access to sufficient food, the provision of skills and jobs for women and the youth, contributes to reduced health inequalities
2. Develop sustainable food production systems, improve the management of natural resources, ecosystems and reduce of poverty

DESIRED OUTCOME:

By 2017, agricultural research provides technological solutions for crop production, livestock breeding and sustained rural development to ensure food security, and agriculture experiences a real average growth of 4% per annum over the NDP4 period

Table 9: PRIORITY RESEARCH AREA 2: AGRICULTURE

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
2 (a) Sustain and improve research competence to raise the productivity and management of crops, livestock, poultry, marine resources, production tools and implements with due regard for impact on the natural environment	N\$ 5 662 650	1) Farmer -to-farmer seed production	# of farmers participated in seed production	Quarterly and Annual Reports	MAWF	Annual	170 Farmers involved in seed production	1490 Farmers involved in seed production	176,700
		2) On-farm assessment of new varieties of crops	# of varieties assessed	Quarterly and Annual Reports	MAWF	Annual	2 Assessments	25 Assessments	29,450
		3) Foundation and certified seed quality assurance and certification	# of tons of seeds produced	Quarterly and Annual Reports	MAWF	Annual	0	1200 Tons of seeds produced	600,000
			# of seed inspectors trained					50 Seed inspectors trained	0
			# of seed fields at Research Stations, Green schemes and Seed growers inspected and certified					50 Seed fields at Research Stations, Green schemes and Seed growers inspected and certified	0
		4) Maintenance breeding of released and pre- released crop varieties in Namibia	# of maintained breeding of released and pre-released crop varieties in Namibia released	Quarterly and Annual Reports	MAWF	Annual	5 Pre-released crop varieties (3 pearl millet, 3 cowpea, 2 sorghum, 1 Maize and 1 Bambaranut)	30 New-released crop varieties	315,000
		5) Updating of Natural Resources Information System (NARIS)	% progress made on data collected and updating of NARIS	Annual Report and NARIS Update Report	MAWF	Annual	Data collected and updated of NARIS (10%)	75% Data collected and updated of NARIS	588,000

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		6) Soil surveying and mapping	# of soil maps of Research Stations with scale of one in fifty thousand (1:50,000) produced	Annual Reports; Station Records; Maps	MAWF	Annual	2 Soil map of Research Stations with scale of one in fifty thousand (1:50,000) produced	28 Soil map of Research Stations with scale of one in fifty thousand (1:50,000) produced	294,000
		7) Agro-climatic data	# of climatic reports released	Quarterly and Annual Reports	MAWF; SASSCAL; MWTC	Annual	0	34 Climatic reports released	370,500
		8) Establishment of Laboratory Management System (MS) based on ISO/IEC 17025	% work completed on the accreditation of the analytical tests used in the Agriculture Laboratory	MS Manual; Master List; SOPs	MAWF	Annual	0	100% Laboratory Management System (MS) implemented	400,000
		9) Nutrition analyses of grains, feed and licks to support research and give recommendation to farmers	# of days turn-around-time reduced	Data sheets; Test Reports; Annual Reports	MAWF	Annual	15 Days	Reduce the turn around days from 15 to 5 days	1,350,000
		10) Soil analysis to supports plant nutrition analysis through soil, manure and leaf analyses	# of days turn-around-time reduced	Data sheets; Test Reports; Annual Reports	MAWF	Annual	15 Days	Reduce the turn around days from 15 to 5 days	1,374,000
		11) Learning from agronomic benchmarks	% of progress made on recommendations on production of crops in agronomic fields implemented	Reports and Publications	NUST	Annual	0	100% Research completed and recommendations implemented	165,000

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
2(b) Promote the research and application of new technologies including safe biotechnology which hold potential for increasing productivity	N\$ 10 109 970	1) Recording, analysis and evaluation of on-farm performance testing of young bulls (Phase D)	# of bulls through Phase D performance testing	DART Records; Annual Performance Reports	MAWF	Annual	450 Bulls tested	4050 Bulls tested	300,000
			# of performance reports	Annual Reports		1 Annual performance reports	8 Annual performance reports	0	
		2) Carcass evaluation on different breeds by using ultra sound scanning - acquire scanner and train and accredited ASO	% capacity building (scanner, training and accreditation)	Project Record Sheets; Project Progress Report; NSBA Records	MAWF	Annual	0	100% Acquire scanner; Training and accreditation of ASO	471,470
			# of alternative diets recommended	Farmers; Experiment Record; Laboratory Results	MAWF	Annual	0	4 Lab analysis of browse, feeds, milk completed; goat experiment completed; Publications of results	360,000
		4) Performance Testing Phase: C Omatjenne	# of individual feeding units installed	DART Breeder Records; NSBA; SA Stud Book; ARC	MAWF	Annual	0	40 Individual feeding units installed	3,400,000
5) Carcass characterization of indigenous goats	# of bulls tested			0	780 Bulls tested	3,650,000			
	# of annual performance reports			1 Annual Performance Reports	8 Annual performance reports	0			
	# of goats slaughtered	Quarterly Report	MAWF	Annual	0	100 Goats slaughtered	20,000		

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		6) Investigation of adaptability of cowpea variety to the Namibian agro climatic condition	# of promising cowpea varieties released % work completed on adaptability of cowpea variety to the Namibian agro-climatic condition	Quarterly and Annual Reports	MAWF	Annual	0	3 Promising cowpea varieties released 100% work completed to investigate 27 cowpea varieties from IITA Nigeria to find at least 3 promising cowpea varieties to be released	42,000 0
		7) Investigation of Namibia Bambara groundnut variety promotion trials	# of Namibia Bambara groundnut varieties pre-released and trailed # of farmers involved in trials # of regions involved in trials # of research and recommendation report	Quarterly and Annual Reports	MAWF	Annual	4 Identified Namibia Bambara groundnut varieties pre-released and trailed	6 807191 kg of Namibia Bambara groundnut varieties pre-released and trailed 35 Farmers involved in trials 7 regions involved on trials 1 Research and recommendation report	58,500 0 0 0

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$							
		8) Investigation for the yield and quality attributes of sweet potato varieties	% of work completed; # of research reports on promising sweet potato varieties to be released	Quarterly and Annual Reports	MAWF	Annual	7 Promising varieties identified from previous trials (30%)	1 Higher yielding varieties released; 7 Promising varieties identified from previous trials	105,000							
										9) Investigation of crop rotation as soil fertility improvement strategy using maize and pearl millet as main crops	Quarterly and Annual Reports	MAWF	Annual	0	4 Reports on soil fertility strategies documented	22,000
														# of reports on soil fertility strategies documented	0	2 Scientific article published
		10) Compost as a strategy for soil fertility improvement using pearl millet as main crop	# of scientific articles published # of trial cycles concluded	Quarterly and Annual Reports	MAWF	Annual	1 first trial cycle concluded and Article published	1 Trials cycle concluded; Article published	0							
		10) Compost as a strategy for soil fertility improvement using pearl millet as main crop	# of reports on successful soil fertility improvement methods	Quarterly and Annual Reports	MAWF	Annual	0	1 Reports on successful soil fertility improvement methods	18,000							
			# of trials planted and results analysed				2 Trials planted and results analysed	12 Trials planted and results analysed	0							

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			# of reports on appropriate application rate of compost				0	1 Reports on appropriate application rate of compost recommended	0
		11) Investigation of biological nitrogen fixation on pearl millet/ cowpeas intercropped	# of trials conducted; # of reports on nitrogen consumption level in pearl millet determined	Quarterly and Annual Reports	MAWF	Annual	0	31 trials conducted	50,000
		12) Investigate cassava varieties for quality (maturity duration and palatable crops)	% work completed on quality cassava crops identified to maturity and palatability	Quarterly and Annual Reports	MAWF	Annual	0	1 Report on Nitrogen consumption level in pearl millet 100% Quality of Cassava variation varieties (number of days for Cassava varieties to reach maturity and palatable crops) determined	45,000
		13) Investigation of the performance of rice cultivars in Oshana and Zambezi river plains	# of trials conducted with 27 rice varieties in Oshana # of trials conducted with 27 rice varieties in Zambezi	Quarterly and annual reports	MAWF	Annual	0	5 Trials conducted with 27 rice varieties in Oshana 5 trials conducted with 27 rice varieties in Zambezi	34,000

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			# of Interim Scientific reports on farm trials of 27 rice varieties				Rice varieties acquired from (Africa rice) Senegal	3 Interim Scientific reports) on farm trials of 27 rice varieties	0
			% work completed on the investigation of the performance of rice cultivars in Oshana and Zambezi river plains				0	100% Scientific report on the identified well adapted varieties	0
		14) Assessment of physico-chemical properties and characterization of Kalimbeza rice field, Zambezi Region	% work done to document the baseline data of rice cultivation	Lab Test Reports; Quarterly and Annual Reports	MAWF	Annual	0	100% Work completed to document the baseline data of rice cultivation	0
		15) Response of sorghum bi-colour variety 'Macia' seed to water priming at different temperature and soaking time range	# of technicians trained in using water-bath for soaking seed	Quarterly and Annual Reports	MAWF	Annual	0	6 Technician trained in using water bath for soaking seed	25,000
			# of reports on optimum combination of temperature and soaking-time identified					1 Report on optimum combination for Temperature and soaking time	0
		16) Investigation of the adaptability of pearl millet (Pennisetum glaucum) varieties to northern Namibian environment	# of reports on well adapted varieties released from 24 varieties acquired from Kenya	Quarterly and Annual Reports	MAWF	Annual	Pearl millet varieties acquired from Kenya	1 Report on well adapted varieties released from 24 varieties acquired from Kenya	20,000

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		17) Disaster risk reduction/management to support agro-pastoral communities affected by recurrent droughts and other natural disasters in Southern Angola and Northern Namibia	# of reports on identified leguminous crops for fodder and soil improvement	Quarterly and Annual Reports	MAWF	Annual	0	1 Report on identified leguminous crops for fodder and soil improvement	279,000
		18) Investigating water use efficiency using Diviner 2000 in pearl millet and cowpea	# of reports on crop water use efficiency in pearl millet and cowpea determined	Quarterly and Annual Reports	MAWF	Annual	0	2 Reports on the determination of crop water use efficiency in pearl millet and cowpea	42,000
		19) Investigate the adaptability of improved open pollinated maize variety	% progress made to report on adapted varieties released	Quarterly and Annual Reports	MAWF	Annual	0	100% Improved 9 open maize varieties acquired from Nigeria, Zambia and Ghana	36,000
		20) Investigation on possible GMO presence in the main crops grown at Green Scheme projects and research stations under MAWF	# of investigations into possible GMO presence in the main crops grown at Green Scheme projects and research stations under MAWF	Sample Forms; Lab Sheet; Test Report; Publication	MAWF	Annual	0	15 Investigations into possible GMO presence in the main crops grown at Green Scheme projects and Research Stations under MAWF	170,000
		21) GMO analysis/detection in food, feed and seeds	# of days turn-around-time reduced	Lab Data Sheet; Test Report; Quarterly Report	MAWF	Annual	15 days	Reduce the turn around days from 15 to 4 days	795,000

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
2(c) Reduce pre-harvest and post-harvest losses in agricultural production - no activities were identified for the strategic initiative - no activities were identified for the strategic initiative									
2(d) Diversification of value chains through post- harvesting value addition	N\$ 1 108 800	1) Processing of cowpea, sorghum and ground nuts into snack food	# of cowpea-sorghum-groundnut snack products developed	Lab Data Sheet; Test Report; Quarterly Report	MAWF	Annual	0	4 Cowpea-sorghum-groundnut snack developed Scientific papers published	422,100
		2) Processing of drinking yogurt flavoured with Berchimia discolour (eembe)	% of work completed on Berchimia discolour (eembe) drinking yoghurt developed	Lab Data Sheet; Test Report; Quarterly Report	MAWF	Annual	0	100% Berchimia discolour (Eembe) drinking yoghurt developed	231,000
		3) Processing of maize and sorghum into snack food	% of work completed on maize-sorghum snack developed	Lab Data Sheet; Test Report; Quarterly Report	MAWF	Annual	0	100% Maize-sorghum snack developed	191,100
		4) Processing of sorghum and eembe muffins and cookies	% of work completed on sorghum-eembe muffin and cookies developed	Lab Data Sheet; Test Report; Quarterly Report	MAWF	Annual	0	100% Sorghum-eembe muffin and cookies developed	264,600
2(e) Promote the development of food processing technologies and other by-product industries in order to enhance value addition for the local market and for exports	N\$ 600 000	1) Traditional Food Microflora Identification & Characterization	# of research articles	UNAM Annual Report	UNAM	Annual	1 Research article	2 Research article	600,000
		2) Physico-chemical and Nutritional Profile of Traditional Food and Beverages	# of technical reports				1 Technical report	2 Technical report	0

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
2(f) Strengthen the production of traditional and non-traditional export commodities to enhance the diversification of the economy - no activities were identified for the strategic initiative									
2(g) Promote research on alien, medicinal, cosmetics and ornamental plants	N\$ 1 640 516	1) Vegetation Survey of Namibia (Task ID 062)	% of work completed to significantly improve the vegetation mapping in Namibia	Field Survey Reports and Annual Reports	NUST	Annual	Vegetation mapping done under the BIOA project	100% Significantly improve the vegetation mapping in Namibia	1,640,516
2(h) Promote soil, rangeland and water resources management	N\$ 8 888 427	1) Applying Becvol model in tree savannah of Namibia with the aim to determine browsing capacity of tree/bush dominated veld 2) Determine grazing capacity in the Southern regions of Namibia using the Grazing Index Method	# of new rangeland surveys conducted	Survey Sheet; Publication	MAWF	Annual	3 Rangeland Surveys	14 Rangeland surveys conducted and surveys completed in Oshana/ Omusati regions	303,620
		3) Pasture Phase 2: The influence of a fodder bank grazing system on the specie composition of the natural vegetation in the camel-thorn savannah of Namibia	# of completed surveys for the Swartrant, "die Kalk", Nauchas, Bullspoort and Rietoog area	Survey Sheets; Publication	MAWF	Annual	42 Surveys (16 for the Swartrant, 16 for "die Kalk" and 10 for the Bullspoort, Nauchas Rietoog area)	42 Surveys (16 for the Swartrant, 16 for "die Kalk" and 10 for the Bullspoort, Nauchas Rietoog area); Completion of article on GIV's for	260,100
			# of dry material collection surveys complete (project started in 2005 and is scheduled to end in 2025, 32 of the scheduled 60)	Field Clippings of Biomass/ Reports	MAWF	Annual	27 Dry Material collection surveys	72 Dry Material collection surveys (60 for total until 2025)	116,900

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		4) Baseline vegetation surveys: Alex, Sonop, John, Kalahari, Gellap Pasture Science	# of baseline surveys completed	Botanical Composition Surveys; Quarterly Reports	MAWF	Annual	6 Baseline surveys completed	21 Surveys completed on baseline surveys for Okomom-bonde, Kalahari and Gellap Research Stations, Mashare and Tsumis	158,000
		5) TFO Future Okavango	# of surveys completed	Botanical Composition Surveys; Quarterly Reports	MAWF	Annual	2 Surveys	12 Surveys completed on botanical composition and determination of browse and grass DM production	12,000
			# of research reports					1 Research report	0
			# of project termination reports					1 Project termination report; Continuance of all botanical composition and DM production surveys	0

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		6) Establishing a bush encroachment map for Namibia	% of work completed on map for the area South of the 23° latitude line and East of the Windhoek/Ariamsvlei tarred road	Bush Count Surveys Reports; Annual Reports	MAWF	Annual	0	100 % of the targeted area (all of Namibia South of the 23° latitude line) covered. A Map was produced for the area South of the 23° latitude line and East of the Windhoek/ Ariamsvlei tarred road	318,100
		7) Effect of season on nutritional value of most common grazing and browsing plants in Oshana, Oshikoto, Omusati and Ohangwena regions	% of work completed on the effect of season on nutritional value of most common grazing and browsing plants in Oshana, Oshikoto, Omusati and Ohangwena regions	Field Surveys Reports; Annual Reports	MAWF	Annual	0	100% work completed on data collection completed on the effect of season on nutritional value of most common grazing and browsing plants in Oshana, Oshikoto, Omusati and Ohangwena regions	105,000
		8) Investigating possibility of cultivated pastures in Northern Communal Areas (NCA)	% of work completed on investigating possibility of cultivated pastures in NCA	Field Surveys Reports; Annual Reports	MAWF	Annual	0	100% Investigation on the possibility of cultivated pastures in NCA	41,900

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		9) Re-sampling of bush population sites in Northern Namibia	% of work completed on maps and GPS localities acquired	Maps; GPS Data and Bush Numbers	MAWF	Annual	0	100% All maps and GPS localities acquired	165,900
		10) Collecting data for publication "Trees and Shrubs of Southern Namibia"	# of species photographed	Field Survey Reports; Annual Reports	MAWF	Annual	22 Species photographed	44 Species photographed	165,000
		11) Classification and description of the vegetation on farm Klein Boesman	% of work completed for vegetation description on the farm	Reports and Publications	NUST	Annual	0	100% Classification and description of the vegetation of farm Klein Boesman completed	315,000
		12) Impact of bush encroachment on ground water resources (Task ID 073)	% of work completed on intervention on impact of bush encroachment on ground water resources	Field Survey Reports; Annual Reports	NUST	Annual	0	100% Impact of bush encroachment on ground water resources intervention completed	6,396,188
		13) Research on the physico-chemical properties of the Kalimbeza rice field soil, and document the physico-chemical properties	% of work completed on data analysis and report writing completed	Annual Reports	NUST	Annual	0	100% First tests for nodulation under controlled conditions completed	0
			% of work completed on data analysis and report writing	Kalimbeza Rice Field Soil Analysis	UNAM	Annual	0	100% Data of the physicochemical properties analysed in the Kalimbeza rice field soil documented	277,000

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		14) Research on the levels of Fe, Zn and Al of the Kalimbeza rice field which are important indicators of soil toxicity for rice growth	% of work completed on the levels of Fe, Zn, Al in the Kalimbeza rice field soil	Kalimbeza Rice Field Soil Analysis	UNAM	Annual	0	100% Data of the levels of Fe, Zn, Al in the Kalimbeza rice field soil documented	0
		15) Characterize Kalimbeza rice field in terms of the physico-chemical properties and provide baseline data for similar study in other agricultural zones with potentials for rice cultivation in Namibia.	# of characterization of the Kalimbeza rice field based on the physicochemical properties obtained and compare with standard lowland rice ecology properties	Kalimbeza Rice Field Soil Analysis	UNAM	Annual	0	1 Characterization of the Kalimbeza rice field based on the physicochemical properties obtained and compare with standard lowland rice ecology properties	0

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		16) Determine soil physico-chemical properties across the agricultural zones of Namibia and compare with the Kalimbeza rice field properties to see which zone has similar properties for possible expansion of the rice cultivation so as to create more jobs	% of work completed on the agricultural zones based on the physicochemical properties obtained and compare with the Kalimbeza rice field baseline to ascertain which zone has the potential for the rice cultivation and expansion	Namibia Agricultural Zones' Soil Analysis	UNAM	Annual	0	100% Characterization of the agricultural zones based on the physicochemical properties obtained and compare with the Kalimbeza rice field baseline to ascertain which zone has the potential for the rice cultivation and expansion completed	0
2(i) Promote horticulture activities around water bodies	N\$ 480 000	1) Integrated agricultural technologies for intensive food production	% of work completed on recommendations for production of vegetables in raised beds	Reports; Publications	NUST	Annual	Control beds to compare with treated beds	100% Recommendations on production of vegetables in raised beds available	480,000
2(j) Strengthen the links between research, industry, agricultural extension and other relevant training providers - no activities were identified for the strategic initiative									
2(k) Develop technologies that promote resilience and are adaptable to the environment and communities in a changing climate	N\$ 5 189 051	1) Efficient water and nutrient use, molecular characterization and nutritional composition of mutant germplasm population	% of work completed on evaluating efficient water and nutrient use, molecular characterization and nutritional composition of mutant germplasm population	Field Data Sheets; Project Report; Publications	MAWF	Annual	Suitable mutant lines of cowpea, pearl millet and sorghum developed	100% Evaluating efficient water and nutrient use, molecular characterization and nutritional composition of mutant germplasm population	360,400
		2) Landscape literacy (Task ID 041)	# of manuals completed # of films produced	Annual Reports; Scientific Journals	NUST	Annual	0	6 AOC EMU manual finalized 1 Film produced	2,793,360

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			# of films translated (funding dependent)					1 Film translated (funding dependent)	0
			# of training courses conducted					3 Training course conducted	0
			# of major project reports produced					1 Major project report produced; Recommendations on rangeland management to maintain rain-use efficiency and restoration to heal rangelands already degraded	0
			# of scientific articles					2 Publication of scientific articles	0
			# of popularisation articles					1 Popularisation article	0
			# of fellowships					2 First 2 year studentship successfully completed	0

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		3) Improved weather observation network (Task ID 001)	# of additional stations established # of Biota weathers station upgraded from current Mike Cotton stations to Cambell Scientific	Windhoek Meteorological Office Standard Automatic Weather Stations reports	MAWF	Annual	21 BIOTA weathers stations	50 Additional stations established 48 BIOTA weathers stations upgraded from current Mike Cotton stations to Cambell Scientific	2,035,291 0
2(l) Promote the conservation and protection of indigenous animal and plant genetic resources	N\$ 8 393 700	1) On-farm conservation practices documented through interviews 2) Degraded habitats and threatened species rescued through seed collecting 3) Determine the reproduction potential of the indigenous goat populations of northern Namibia 4) SWAKARA breeding and conservation Gellap Ost	% of work completed on the on-farm conservation practices surveyed # of threatened species collected # of trials of 250 indigenous goats' reproduction and production potential determined # of annual conservation reports	Quarterly, Annual, Progress & Final Reports Quarterly, Annual and Progress Reports Goat Registers; Quarterly Report; Agricola Publication Animal Registers; Breeders Society; SWAKARA Board Reports; NSBA	MAWF MAWF MAWF MAWF	Annual Annual Annual Annual	0 12 Species collected 0	100% On-farm conservation practices documented 575 Species collected 6 Trials of 250 indigenous goats' reproduction and production potential determined	19,500 476,000 1,089,000
					MAWF	Annual	1 Annual conservation report on 5 SWAKARA types	8 Annual conservation reports on 5 SWAKARA types	2,186,050

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		5) Distributing breeding material to farmers and monitoring the impact of the bulls distributed in Central Northern Namibia	# of genetic material distributed activities	Information from DAPEES; Farmers; DVS	MAWF	Annual	1 Genetic material distributed activity	7 Genetic material distributed activity	467,100
		6) Effect of age of first calving on production and reproduction of Simmentaler Stud herd at John Pandeni	% of data collection process	Quarterly, Annual and Progress Reports	MAWF	Annual	Data on production and reproduction from 2011 to 2013	33% Record the effect of age on first calving on production and reproduction of Simmentaler Stud herd at John Pandeni in period 2013 to 2016	217,350
		7) Stud Breeding Boer Goat Omatjenne	# of stud boer goat registered	Animal Registers; Breeder Society; NSBA	MAWF	Annual	100 Goats registered	1135 Goats registered	1,983,000
		8) Stud Breeding Damara Sheep Omatjenne	# of stud Damara sheep registered	Animal Registers; Breeder Society; NSBA	MAWF	Annual	300 Sheep registered	300 Sheep Registered	1,663,700
		9) Collection, multiplication and characterization of local maize germplasm	# of local maize germplasm with desirable traits identified for breeding	Quarterly and Annual Reports	MAWF	Annual	30 Local maize germplasm collected for breeding	60 Screening and characterisation of germplasm completed	60,000
		10) Characterisation and evaluation of awned pearl millet (Penissetum glaucum) landraces	# of awned pearl millet promising varieties identified	Quarterly and Annual Reports	MAWF	Annual	3 Local germplasm for awned pearl milled collected for breeding	12 Selected awned pearl millet varieties evaluated and characterised	130,000

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		11) Characterization and evaluation of pearl millet accessions trial	% of pearl millet accessions characterised	Record Sheets; Quarterly and Annual Reports	MAWF	Annual	0	100% Promising millet accessions identified	51,000
2(m) Promote marketing research for agricultural commodities	N\$ 225 000	1) Investigating factors limiting small-scale vegetable production: a case study for Rundu town informal settlements	% of small-scale farmers in Rundu informal settlement able to withstand production challenges	MAWF - DAPEES Annual Reports; RTC Database	UNAM	Annual	0	95% Small scale farmers in Rundu informal settlement able to withstand production challenges	225,000
2(n) Conservation of indigenous and other national species including but not limited to livestock, plants and marine resources	N\$ 3 182 937	1) C122:C126 Research trials on drought and / or frost resistant species maintained	# of drought/frost resistant species research trials maintained	Quarterly, Annual & Progress Reports	MAWF	Annual	2 Trials maintained	10 Drought/frost resistant species research trails maintained	500
		2) Adequate data on growth and yield for key tree species provided	# of annual reports on progress towards the Makambu and Kanovlei fire trials monitored and maintained	Quarterly, Annual & Progress Reports	MAWF	Annual	1 Annual reports on progress towards the Makambu and Kanovlei fire trials monitored and maintained	7 Annual reports on Progress toward the Makambu and Kanovlei fire trials monitored and maintained	200,000

Programmes/ Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		3) Survey on marula resource to determine fruit supply capacity in Namibia (Oshana, Oshikoto, Omusati and Ohangwena regions and average kilograms (Kgs) of fruits per tree)	% work completed on the survey on marula resource to determine fruit supply capacity in Namibia	Report on Marula Resource Assessment to Determine Fruit Supply Capacity in Namibia Completed	MAWF	Annual	0	100% Completion on survey on marula resource to determine fruit supply capacity in Namibia (Oshana, Oshikoto, Omusati and Ohangwena regions) average Kgs of fruits per tree	50,000
		4) New field-based research trials established (Berchemia provenance trial at Iiheke Forestry Research Station)	# of new field based research trials established	Quarterly, Annual, Progress Reports; Publications	MAWF	Annual	0	2 New field based research trials established	140,000
		5) Plant and vegetation databases of the National Botanical Research Institute, Namibia (Task ID 059)	% data enhanced and maintained for selected plant taxa	Herbarium Specimen	MAWF	Annual	20% Existing herbarium record and literature data	100% Enhanced and maintained data for selected plant taxa	1,284,542
		6) Establish and improve baseline inventories for spatial data on biodiversity - Flora of Namibia Project (Task ID 060)	% of baseline data for selected plant taxa improved	Herbarium Specimen	MAWF	Annual	50% Existing herbarium records and literature	100% Improved base-line data for selected taxa of plants; Manuscript submitted for publication	932,895
		7) Genetic and phenotypic characterization of indigenous cattle ecotypes in Namibia	% of genetic and phenotypic characterization of indigenous cattle ecotypes in Namibia completed	Quarterly, Annual & Progress Reports	MAWF	Annual	Initial characterization of indigenous cattle and goats using micro satellites in 2002	100% Characterization of indigenous cattle and goats using micro satellites using SNP completed	575,000



PRIORITY RESEARCH AREA 3: FISHERIES

SPECIFIC OBJECTIVES:

Support progress in the working deeper water offshore, valorising the diversity of marine life and promote sustainable fishing of deep sea resources and caring for marine environment

DESIRED OUTCOME:

By 2017, sustainable fisheries and value addition of the Namibia fishery products is achieved through research and innovation

Table 10: PRIORITY RESEARCH AREA 3: FISHERIES

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
3(a) Create an understanding of Namibia's freshwater ecosystems and species diversity too evaluate the potential for aquaculture	N\$ 1 751 839	1) Improve knowledge of aquatic ecosystems supporting fisheries, development of integrated strategies for sustainable fisheries and improved fisheries management (Task ID 166)	# of social science reports on Liambezi fishing communities	Annual Reports	NNF	Annual	0	2 Social science reports on Liambezi fishing communities	1,721,839
			# of research reports or papers				0	18 Research reports or papers	
			# of peer-reviewed papers	Published Papers			Basic annual gillnet monitoring Programme by MFMR; Social science studies in early 2000s and 2 biological MScs in progress under NNF	17 Peer-reviewed papers	
			# of conference presentations	Conference Proceedings				32 Conference presentations	
			# of PhD graduates,	Annual Reports				4 PhD students	
			# of MSc graduates					4 MSc students	
			# of BSC Final year project graduates					12 BSC Final year project students	
		2) Research on freshwater fish parasites in Hardap dam and Orange river	# of publications	Annual Report and Scientific Journals	UNAM	Annual	Publications freshwater fish parasites in Okavango river and Kwando river	2 Publications on freshwater fish parasites in Hardap dam and Orange river	30,000
			# of BSc Hon graduates	Graduates Roll				1 BSc Hon	
			% of work completed in dissemination workshops	Workshop Proceedings				100% Disseminate results in form of workshops in communities	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$	
3 (b) Diversify investment from fisheries towards other economic sectors and industries- no activities were identified for the strategic initiative										
3(c) Improve understanding of northern Benguela ecosystem	N\$ 2 161 900	1) Create SQL database for oceanographic monitoring data that is accessible by MFMR scientists and compatible with fisheries databases to investigate fisheries and environment linkages	# of operational oceanographic databases	Annual Reports	MFMR	Annual	0	1	100,000	
							Operational oceanographic database	Operational oceanographic database		
		2) Determine the extent to which ocean acidification has impacted the Namibian marine environment	% work completed on impact of acidification on the Namibian marine environment	Annual Report; Graduates Roll; Scientific Journals	UNAM; MFMR	Annual	0	0	100%	1,000,000
								Work completed on impact of acidification on the Namibian marine environment	100% Work completed on impact of acidification on the Namibian marine environment	
3) Investigation on biological aspects of kingklip and monkfish	# of PhD graduates	Annual Report; Graduates Roll; Scientific Journals	UNAM; MFMR	Annual	0	0	1	1,000,000		
						PhD graduate	1 PhD graduate			
4) Develop new cultivation techniques for seaweed	# of scientific papers to be published	Survey Reports; Annual Report; Scientific Journals	MFMR	Annual	Publications on the feeding patterns of kingklip and monkfish	1	6	1,000,000		
						PhD graduate	6 Journal publications			
4) Develop new cultivation techniques for seaweed	# of scientific methods to cultivate seaweed on land in Namibia	Annual Report; graduates Roll; Scientific Journals	UNAM	Annual	3	3	1	1,000,000		
						International scientific methods to cultivate seaweed on land	1 Scientific method to cultivate seaweed on land in Namibia			

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			# of PhD graduates					9 PhD	
			# of BSc Hon. Graduates					3 BSc Hon	
			# of publications					1 Publication on the investigation of Namibian seaweed species	
		5) Promote the utilization of seaweed	# of BSc Hon graduates	Annual Reports; Graduates Roll	UNAM	Annual	Publications on the incorporation of seaweed into mushroom substrate	1 BSc Hon	50,000
		6) Research into feeding ecology of Namibian marine fish species	# of publications	Annual Report; Graduates Roll; Scientific Journals	UNAM	Annual	Publications on the feeding patterns	4 Publications on feeding ecology of Namibian marine fish species	75,000
			# of BSC Hon graduates					2 BSc Hon	
		7) Research on comparisons of bio-chemical compositions of hake and horse mackerel	# of publications	Annual Report; Graduates Roll; Scientific Journals	UNAM	Annual	0	3 Publications on bio-chemical compositions of hake and horse mackerel	290,000
			# of BSc Hon graduates					5 BSc Hon	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
3(d) Employment value addition and market diversification	N\$ 2 200 000	8) Research on the implementation of ecosystem approach to fishery management in Namibia	# of publications	Annual Report; Graduates Roll; Scientific Journals	UNAM	Annual	Feasibility study on the implementation of ecosystem approach to fishery management in Namibia	2 Publications	20,000
			# of technical reports					1 Technical report	
			# of graduates					1 BSc Hon	
		9) Research on the propagation of Namibian marine finfish for mariculture	# of publications	Annual Report Graduates Roll Scientific Journals	UNAM	Annual	Publications on spawning, larval rearing and weaning diet	3 Publications	40,000
			# of technical reports					6 Conference papers	
			# of graduates					6 BSc Hon	
		10) Human health risk assessment of emerging phytotoxins affecting the Namibia marine culture industry	# of publications	Annual Reports; Graduates Roll; Scientific Journals	UNAM	Annual	Publications on phytotoxins from Namibia marine environment	2 Publications	
			# of technical reports					4 Technical reports	
			# of graduates					3 BSc Hon	
		3(d) Employment value addition and market diversification	N\$ 2 200 000	1) Research to establish the best practices for value addition & market diversifications in employment creation in Namibia	# of scientific research document on innovation & value addition strategy for employment creation in Nam fisheries sector	Research Reports	UNAM	Annual	0
# of scientific research papers	5 Scientific research papers								
# of workshops	3 Workshops								
# conference papers	3 Conference papers								

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			<p># of technical research papers</p> <p># of tri-partite (Unam, MFMR, fisheries sector & relevant stakeholders) innovation value addition research framework in the fisheries sector document</p> <p>% work completed on research framework for employment creation through innovation, value addition, product & market diversification established</p>					<p>3 Technical research papers</p> <p>1 Tri-partite (Unam, MFMR, fisheries sector & relevant stakeholders) innovation value addition research framework in the fisheries sector document</p> <p>100% Research framework for employment creation through innovation, value addition, product & market diversification established</p>	



PRIORITY RESEARCH AREA 4: WATER

SPECIFIC OBJECTIVES:

Ensure safe and reliable water supply and sanitation services should be available for urban and rural areas

DESIRED OUTCOME:

By 2017, Namibia has formulated solution for sustainable security water supply through research and innovation

Table 11: PRIORITY RESEARCH AREA 4: WATER

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
4(a) Promote communication and consultation between institutions in the water sector, to encourage the development of a shared vision concerning water in Namibia, and the needs for water research	N\$ 2 805 000	1) Enhancing capacity to access, use and efficiently manage scarce water resources in rural communities: Experiences from Namibia and South Africa	# of peer reviewed papers	Annual Reports; Scientific Journals	MAWF	Annual	0	1 Peer reviewed paper	130 000
			# of technical reports	Annual Reports				1 Technical report	
		2) Development of approaches, tools, and instruments for capacity development in the water sector to improve the performance of water service providers	# of peer reviewed papers	Annual Reports; Scientific Journals	MAWF	Annual	0	1 Peer reviewed paper	340 000
			# of technical reports					1 Technical report	
		3) Establishment of a framework for improving the effectiveness of water services provider: performance of water utilities	# of peer reviewed papers	Annual Reports; Scientific Journals	MAWF	Annual	0	1 Peer reviewed paper	335 000
			# of technical reports					1 Technical report	
		4) Development of an incentive-based policy instrument for water use efficiency and for allocation of high water using industries or factories to area where there is more water	# of peer reviewed papers	Annual Reports; Scientific Journals	MAWF	Annual	0	1 Peer reviewed paper	600 000
			# of technical reports					1 Technical report	
			# of policy documents					1 Policy document	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
4(b) Technologies and management systems for water in the industrial, domestic and agricultural spheres including inventory of subterranean and surface water resources, their quality, quantity and potential use	N\$ 13205	5) Investigation for possible establishment of a unit to focus on trans-boundary water issues and also skills development for negotiator	# of peer reviewed papers	Annual Reports; Scientific Journals	MAWF	Annual	0	1 Peer reviewed paper	200 000
		6) Status of drinking water supply coverage in Namibia; targets; Institutional set up; sustainability; challenges and opportunities	# of technical reports					1 Technical report	
	1) Operational system for remote sensing based flood monitoring and mapping services	# of peer reviewed papers	Annual Reports; Scientific Journals	NAMWATER	Annual	0	1 Peer reviewed paper	1,200 000	
	2) Effective water metering and data monitoring:	# of technical reports				IWRMP 2012	1 Technical report		
			% of work completed on operational system for remote sensing based flood monitoring and mapping services	Field Surveys Report; Lab Report; Annual Reports	MAWF	Annual	0	100% Operational system for remote sensing based flood monitoring and mapping services	5 832 206
		(a) Develop a national road map for Smart water metering and intelligent water networks	% of national roadmap for smart water research.	TaKaDu - www.takadu.com	UNAM	Annual	0	100% National roadmap for smart water research	2 300 000
		(b) Implement a pilot smart water metering network in one of the local authorities preferably Tsumeb	# of pilot smart water metering networks for Tsumeb.	Smart Water Networks (SWAN) Forum - http://www.swan-forum.com/				1 Pilot smart water metering network for Tsumeb	
		(c) Develop low cost smart water metering infrastructure for Namwater's bulk meters	# of low cost smart water metering infrastructure for Namwater's bulk meters					1 Low cost smart water metering infrastructure for Namwater's bulk meters developed	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
4(c) Support and develop identified water management and water engineering R&D programmes	N\$ 3 43 0000	(d) Initiate collaboration activities with leading research centres in Smart Water Research Centres in Australia and Israel,	# of MoU between Namwater, UNAM, and Smart Water Research Centre in Australia	Smart Water Research Centre - http://www.smartwaterresearchcentre.com/				2 MoU between Namwater, UNAM, and Smart Water Research Centre in Australia	
		(e) Develop software for water demand prediction and forecasting	% work completed on the develop software for water demand prediction and forecasting					70% Finalize the development of the water demand prediction and forecasting software	
		1) Investigate for advance, effective and efficient methods of water treatment for deteriorating surface water and groundwater quality	# of peer reviewed papers # of technical reports # of graduates	Annual Report; Scientific Journals	NAMWATER	Annual	0	1 Peer reviewed paper 1 Technical report 1 MSc student	1,430,000
4(d) Commercialise viable R&D outputs (Innovation and value-addition)-no activities were identified for the strategic initiative		2) Investigate for alternatives solutions for water disinfection at small water schemes	# of peer reviewed papers # of technical reports	Annual Reports; Scientific Journals	NAMWATER	Annual	0	1 Peer reviewed paper 1 Technical report	1,000,000
		3) Investigation of water pump stations efficiency	# of peer reviewed papers # of technical reports	Annual Reports; Scientific Journals	NAMWATER	Annual	0	1 Peer reviewed paper 1 Technical report	1,000,000
4(e) Develop human and institutional R&D capacities for water management and the production of water engineering products and services- no activities were identified for the strategic initiative									

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
4(f) - Technology investigation for water demand management and groundwater protection	N\$ 6 827 443	1) Improving knowledge and understanding of groundwater flow, water quality and quantity variations, improve methodology of groundwater availability study: Cuvelai – Kunene (Task ID 007)	# MSc students	Field Surveys Reports;	UNAM	Annual	0	1 MSc student	3,827,443
			# BSC Final year project students	Lab Analyses Reports;	UNAM	Annual	0	11 BSc Final year project students	
			% work completed on re-charge model	Annual Reports Graduates Rolls				100% Re-charge model	
		2) Establishment of a relationship between rainfall distribution, surface water groundwater recharge	# of Peer reviewed Papers	Annual Reports; Scientific Journals	NAMWATER	Annual	0	1 Peer reviewed paper	2,400,000
			# of Technical Reports				1 Technical report		
		3) Investigate online water quality monitoring instrument for critical groundwater and surface water sources which are prone to contamination	# of peer reviewed papers	Annual Reports; Scientific Journals	NAMWATER	Annual	0	1 Peer reviewed paper	600,000
			# of technical reports				1 Technical report		
4(g) Research on national pollution control and effluent discharge quality and appropriate regulations implementation	N\$ 2 030 000	1) Investigate and pilot a waste discharge charge systems for polluters: The case of the Upper Swakoppoort Catchment	# of Peer reviewed papers	Annual Reports; Scientific Journals	NAMWATER	Annual	0	1 Peer reviewed paper	600,000
			# of Technical reports				1 Technical report		
		2) Optimisation of water quality monitoring system at treatment plants, pipelines, boreholes and dams with emphasis on frequency of sampling, and critical parameters to consider.	# of Peer reviewed papers	Annual Reports; Scientific Journals	NAMWATER	Annual	0	1 Peer reviewed paper	1,000,000
			# of Technical reports				1 Technical report		

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
4(h) Economic and financial modelling on effective tariff setting and implementation (including development of regulatory framework)	N\$ 10 700 000	3) Investigate water quality and algal toxin monitoring and removal from eutrophic systems - Case of Swakoppoort dam	# of MSc graduates	Annual Reports; Scientific Journals	NAMWATER	Annual	0	2 MSc students	430,000
			# of technical reports					1 Technical reports	
			# of peer reviewed papers					2 Peer reviewed papers	
			# of peer reviewed papers					1 Peer reviewed paper	
4(h) Economic and financial modelling on effective tariff setting and implementation (including development of regulatory framework)	N\$ 10 700 000	1) Compare the difference in water tariffs structure between NamWater and Local Authorities and proposed an integrated approach tools/framework for water tariff in Namibia. 2) Investigate the willingness to pay for water versus affordability of water	# of technical Reports	Annual Reports; Scientific Journals	MAWF	Annual	0	1 Peer reviewed paper	600,000
			# of peer reviewed Papers					1 Peer reviewed paper	
			# of technical reports					1 Technical report	
			# of peer reviewed Papers					1 Peer reviewed paper	
4(h) Economic and financial modelling on effective tariff setting and implementation (including development of regulatory framework)	N\$ 10 700 000	3) Economics and financial analysis of water and sanitation projects in Namibia	# of peer reviewed papers	Annual Reports; Scientific Journals	MAWF	Annual	0	1 Peer reviewed paper	4,000,000
			# of technical reports					1 Technical report	
			# of peer reviewed papers					1 Peer reviewed paper	
			# of technical reports					1 Technical report	
4(h) Economic and financial modelling on effective tariff setting and implementation (including development of regulatory framework)	N\$ 10 700 000	4) Assessing the potential of private sector investment in the water and sanitation infrastructure for urban and rural area	# of peer reviewed papers	Annual Reports; Scientific Journals	MAWF	Annual	0	1 Peer reviewed paper	200,000
			# of technical reports					1 Technical report	
			# of peer reviewed papers					1 Peer reviewed paper	
			# of technical reports					1 Technical report	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
4(i) Alternative water supply options, specific to effective water metering and data monitoring	N\$ 4 100 000	5) Water accounting: assess to water resources, usages, and productivity in established river basins for both surface and groundwater	# of peer reviewed papers # of technical reports	Annual Reports; Scientific Journals	MAWF	Annual	0	1 Peer reviewed paper 1 Technical report	5,000,000
		6) Economic perspective of water policy and management under climate change and variability	# of peer reviewed Papers # of technical reports	Annual Reports; Scientific Journals	MAWF	Annual	0	1 Peer reviewed paper 1 Technical report	500,000
		1) Investigate the potential of groundwater at the boundaries of Kalahari group and Otavi group north of Lake Oshikoto	# of peer reviewed papers # of technical reports	Annual Reports; Scientific Journals	NAMWATER	Annual	0	1 Peer reviewed paper 1 Technical report	3,600,000
		2) Investigate the potential for Nam Water to engage in water recycling at treatment plant and waste water recycling in local authorities area	# of peer reviewed papers # of technical reports	Annual Reports; Scientific Journals	NAMWATER	Annual	0	1 Peer reviewed paper 1 Technical report	500,000



PRIORITY RESEARCH AREA 5: ENERGY

SPECIFIC OBJECTIVES:

Promote technology innovation for production, distribution and storage, alternative energies, including wind, solar or biomass source for rural electrification, rural water supply and solar housing and water heating

DESIRED OUTCOME:

By 2017, Namibia will have in place adequate base load energy to support industry development through construction of energy infrastructure

Table 12: PRIORITY RESEARCH AREA 5: ENERGY

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
5(a) Promote research and development programme relating to alternate energy sources such as solar energy, biomass, wind and other renewable energy sources and upgrading hydropower energy production technology to supplement the current non-renewable energy sources	N\$ 2 165 000	1) Research to compare Solar Irradiance Data in Namibia from pyrheliometers and shadow band rotating pyranometers	# of data collection reports	Annual Reports; Conference Proceedings	NAMPOWER	Annual	Pre-Feasibility Study for the Establishment of a Pre-Commercial Concentrated Solar Power Plant In Namibia	1 Data collection report	20,000
			# of scientific papers presented at Solar PACES conference					1 Scientific paper presented at Solar PACES conference on "Comparison of sun irradiance data measured from different sensors in the Namibian environment"	
		2) Research into optimization of Biomass Power Station in Namibia	# of scientific and/or technical reports # of scientific papers presented	Annual Reports; Conference Proceedings	NAMPOWER	Annual	Pre-Feasibility Study for Biomass Power Plant, Namibia	1 Scientific and/or technical report 1 Scientific paper presented on "Investigation into the most optimum sizing, location and supply chain logistics for a Biomass Power Station in Namibia"	20,000
		3) Research into trends in utility-scale PV Storage	# of scientific and/or technical reports # of scientific papers presented.	Annual Reports; Conference Proceedings	NAMPOWER	Annual	0	1 Scientific and/or technical report 1 Scientific paper presented on "Assess the latest trends in utility-scale PV Storage, and recommend the most optimal solution(s) for Namibia"	20,000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		4) Research and testing of potential alternative / supplementary fuel(s) for Van Eck Power Station, e.g. torrefied wood coal, used tyre rubber etc.	# of technical report on values of fuel chemical composition (combustion energy), availability , economic and environmental sustainability of used tyre rubber and torrefied wood coal fuels for combustion in Van Eck Power Station Boilers	Annual Reports; Technical Reports; Project Reports; Scientific Journals	NAMPOWER	Annual	1 Technical report on values of fuel chemical composition (combustion energy), availability , economic and environmental sustainability of coal fuels for combustion in Van Eck Power Station Boilers	4 Technical reports on values of fuel chemical composition (combustion energy), availability , economic and environmental sustainability of used tyre rubber and torrefied wood coal fuels for combustion in Van Eck Power Station Bilers	2,000,000
			# of MSc graduates					1 MSc student	
			# of Scientific publications					2 Scientific publications on the ratio of fuel imported vs locally-sourced fuel for Van Eck power station	
		5) Research on bio-gas production from domestic waste	# of research reports	Annual Reports; Technical Reports; Project Reports; Scientific Journals	UNAM	Annual	Publications of biogas generation	1 Research report	105,000
			# of construction of bio-digesters					1 Construction of bio-digesters	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
5 (b) Promote research and development efforts aimed at popularization and dissemination of energy technology for rural development	N\$ 2 616 000	1) Research and development on alternate energy sources at Luderitz - Phase 1	# of training workshops on bio-gas production	Annual Reports; Project Reports; Conference Proceedings	UNAM	Annual	0	9 Training workshops on bio-gas production	1,116,000
			# of training maunal produces					2 Training manual produced	
			# of scientific publications					3 Scientific publications and demonstration of bio-gas production; Data collection continues; Community training; Dissemination of information	
			# of wind power research and demonstration facilities					1 Wind power research and demonstration facility	
			# of low-income households receiving affordable renewable energy				0	150 Low-income households receiving affordable renewable energy	
			# of SMEs receiving affordable renewable energy				Wind Atlas for Luderitzbucht from GIZ	20 SMEs receiving affordable renewable energy	
			# of community facilities receiving affordable renewable energy					5 Community facilities receiving affordable renewable energy	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			# of community turbine maintenance technicians trained					10 Community turbine maintenance technicians trained	
			# of training manuals developed (Technical, administrative & management)					3 Training manuals developed (Technical, administrative & management)	
			# of BSc Eng. student project/s					3 BSc Eng. student projects	
			# of BSc Eng. student attachments					6 BSc Eng. student attachment	
			# of R&D scientific papers					14 R&D scientific papers	
			# of seminars					4 Seminars	
			% of progress made on simulation software					100% Simulation software obtained	
		2) Research and Development on alternate energy sources at Luderitz - Phase 2	# of M.Eng postgraduate research fellow/s	Annual Reports; Project Reports; Conference Proceedings	UNAM	Annual	0	6 M.Eng postgraduate research fellows; Community consultation and preparation of final design and agreement on ownership, management, operations and maintenance of the project.	150,000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			# of workshop for prototype and research development					1 Workshop for prototype and research development and tested	
			% work completed on Phase 2 of project					100% Work completed on Phase 2 of project	
5(c) Conduct research on the feasibility of nuclear energy resources for medical use- no activities were identified for the strategic initiative									
5(d) Develop an integrated petrochemical industry- no activities were identified for the strategic initiative									
5(e) Promoting Domestic biogas technology in Namibia	N\$ 400 000	1) Use of dry digester technology	% saving on domestic energy	MME and Farmers; NPC	NUST	Annual	Domestic energy use reports e.g. from census 2012; livestock census; water use; and subsistence farming scale	40% Determined (in %) saving on domestic energy used;	
			# of households benefited in the project					40 Households benefited in the project	
			% reduction of CO2 emission from fossil					40% Determined reduction of CO2 emission from fossil	
		2) Zero grazing farming on small scale	% increase of food productivity due to use of chemical fertilisers					10% Determined increased food productivity due to use of chemical fertilisers	
		3) Agro-energy promotion and increase food production/ subsistence farming	% reduction in imported LPG					5 % Reduction in imported LPG;	
			# of publications					30 Scientific publications	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
5(f) Research on design of the new X-blade Francis turbine runner ,Computerised Fluidised dynamic Study on the new design runner blades and Scale Model Testing on the new Prototype Runner for Ruacana Power Station	N\$ 10 000 000	1) Research and design on new runner blade to improve power output, efficiency and reduce cavitation	# of Computational Fluid Dynamics (CFD) report	Annual Reports; Technical Reports	NAMPOWER	Annual	Performance of traditional (existing) runner design to form the baseline for research and design on new runner	1 Computational Fluid Dynamics (CFD) report	0
			# of scale model test report outlining improvement in efficiency, maximum power output and reduction of cavitation					1 Scale model test report outlining improvement in efficiency, maximum power output and reduction of cavitation	
			# of MSc students					1 MSc student	
			# of scientific publications					2 Scientific publications	
		1) Manufacturing and installation of new turbine runner on Ruacana Power station Unit 1 - 3	# of runner performance test	Annual Reports; Technical Reports	NAMPOWER		1 Runner performance test	6 Runner performance test	10,000,000
			# of MW per turbine power output increase					15 MW per turbine power output increase	
			% efficiency increase					7-10% Efficiency increase	
			% reduction of cavitation					7-10% Reduction of cavitation	
5(g) Conduct research on the feasibility of rehabilitating Van Eck Power Station	N\$ 346 450 000	Rehabilitation of Van Eck Power Station to extend its life by 10 years	% progress made on technical reports on availability and reliability factors of the refurbished units vs the reliability and availability factors prior to the rehabilitation of Van Eck Power Station	Annual Reports; Technical Reports	NAMPOWER	Annual	1 Technical report on the reliability and availability factors prior to the rehabilitation of Van Eck Power Station	100% Technical report on availability and reliability factors of the refurbished units and their comparison to the factors prior to the rehabilitation of Van Eck Power Station completed	346,450,000



PRIORITY RESEARCH AREA 6: GEOSCIENCE

SPECIFIC OBJECTIVES:

Increase geological maps coverage through surveying and research support mineral explorations in Namibia

DESIRED OUTCOME:

1. By 2017 Namibia has detailed and reliable geological map coverage through surveying and research to support mineral exploration
2. Namibia has enhanced knowledge of geosciences to support mineral and water exploration, land use and geo-environment management

Table 13: PRIORITY RESEARCH AREA 6: GEOSCIENCE

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
6(a) Promote and support acquisition of geo-scientific knowledge to enhance the understanding of geosciences	N\$ 125 000	1) Dissemination of geoscientific information	% of increase in accessibility to geoscientific information	Geological Survey of Namibia (GSN)	MME	Annual	17 GSN Annual reports	3	25 000
			# of geoscientific publications				33 1:250K Geological map sheets available		
			# of new research promoted for the acquisition of geo-scientific knowledge to enhance the understanding of geosciences				226 Publications		
6(b) Promote and support acquisition of geo-scientific knowledge to enhance the understanding of geosciences	N\$ 125 000	2) GSN Geoscience Publications (Journal, Memoir, books and reports)	% of increase in accessibility to geoscientific information	GSN	MME	Annual	38 of Geoscience Publications	6 Geoscience Publications	100 000
			# of geoscientific publications				65 Educational and promotional items produced; Distribute geoscientific information		
			# of new research promoted for the acquisition of geo-scientific knowledge to enhance the understanding of geosciences				226 Publications		
6(b) Promote and support acquisition of geo-scientific knowledge to enhance the understanding of geosciences	N\$ 125 000	1) Dissemination of geoscientific information	% of increase in accessibility to geoscientific information	Geological Survey of Namibia (GSN)	MME	Annual	17 GSN Annual reports	3 Annual report	25 000
			# of geoscientific publications				33 1:250K Geological map sheet available		
			# of new research promoted for the acquisition of geo-scientific knowledge to enhance the understanding of geosciences				226 Publications		

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$	
6(c) Conduct geoscience analysis, surveying and research, and strengthen collaboration between research and private stakeholders.	N\$ 28 399 000	2) GSN Geoscience Publications (Journal, Memoir, books and reports)	# of geoscientific publications	GSN	MME	Annual	38 Geoscience Publications	7 Geoscience Publications	100 000	
		1) Regional Geological Mapping	% increased geological map coverage of Namibia	Regional Geoscience Division, GSN	MME	Annual	55% Detailed Geological map coverage	30% Detailed Geological map coverage	2 154 000	
		2) Regional Geochemical Sampling Survey	# of regional geochemical sampling map sheets completed	Geochemistry & Laboratory Division, GSN	MME	Annual	7 Regional Geochemical Sampling Map Sheets	4 Regional Geochemical Sampling	2 254 000	
			# of elemental analysis of geological samples for the OKH map sheet completed				0	1 (Elemental Analysis of Geological Material)		
			# of geochemical map production and interpretation of geological samples for the OKH map sheet produced				0	1 Geochemical Map Production and Interpretation of Geological Samples for the OKH Map Sheet		
			# of report of geological samples for the OKH map sheet produced				0	1 Report for Geological Samples for the the OKH Map Sheet		
		3) National Airborne and Ground Geophysical Surveys	% of progress made on the National airborne and ground geophysical surveys	Geophysics Division, GSN	MME	Annual	80 National Airborne and Ground Geophysical Surveys completed	100% 5 National Airborne and Ground Geophysical Surveys to increase the coverage of up to date High resolution Geophysical data conducted	18 500 000	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$	
6(d) Conduct geo-environmental monitoring and risk assessment of active and abandoned mines		4) Interpretation of Regional Geophysical data	# of GIS compatible, Geophysical products	GSN	MME	Annual	0	2 New GIS compatible, Geophysical products	4 500 000	
		5) Namibia Corescan Lab	# of functional Namibian Corescan facility	Geophysics and Economic Division, GSN	MME	Annual	0	1 Namibian Corescan facility acquire and setup	2 000 000	
		6) Namibia Remote Mineral Mapping	# Spectral mineral mapping projects	Regional Geoscience Division, GSN	MME	Annual	Spectral mineral mapping project	1 Spectral mineral mapping project conducted	100 000 00	
		N\$ 2 322 000	1) Environmental Geological research	# of monitoring and risk assessment conducted	Environmental and Engineering Geology Division, GSN	MME	Annual	18 Monitoring and risk assessments of active and abandoned mines	128 Monitoring and risk assessment of active and abandoned mines	1 000 000
			2) Engineering geological mapping of Windhoek	# of scientific report compiled for map	Environmental and Engineering Geology Division, GSN and PhD thesis	MME	0	1 Scientific report for map	872 000	
				% of work completed of engineering geological map of Windhoek						
				% of PhD studies completed						
	3) Microbial and phytoremediation of selected Namibian mines		# of scientific articles	Annual Reports	UNAM	0	1 Scientific article	450 000		
			# of conference presentation						Graduates Roll,	1 Conference presentation
			# of BSc Hon graduates							

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
6(e) Promote the expansion and management of geoscientific data, and development of storage facilities.	N\$ 1 000 000	1) Manage Geological Data	# Geodatabases maintained	GSN	MME	Annual	2 Upgrade, manage and populate geodatabases	7 Upgrade, manage and populate geodatabases	1 000 000
			% Uptime of geodatabases				95% Uptime of geodatabases	98% extra Uptime of geodatabases	
6(f) Promote the expansion and management of geophysical networks, to ensure comprehensive national coverage of seismic events	N\$ 650 000	1) Namibia Geophysical Network	# Functional High-end File Transfer Protocol (FTP) facility	Geophysics Division, GSN	MME	Annual	0	1 Acquire and implement High-end File Transfer Protocol (FTP) facility	650 000
			# WebGIS				WebGIS	2 Acquire and implement WebGIS	
			% of Geoscience data served on the Web				40% Geoscience data served on Web	60% Geoscience data served on Web	
6(g) Create awareness and ensure protection of geo-heritage, and potential fossil and/or meteorite sites	N\$ 120 000	1) Research on Geo-Heritage & Fossils	% Increased seismological coverage	Geo-information Division, GSN 2015 & 2017; MME newsletters	MME	Annual	90% Uptime of seismological stations	8% New Uptime of seismological stations	120 000
			# Seismological stations				8 Seismological stations	12 New Seismological stations	
			# of MME newsletters to publicise local and/or foreign research activities on Namibian soil				5 MME newsletters to publicise local and/or foreign research activities on Namibian soil	3 New MME newsletters to publicise local and/or foreign research activities on Namibian soil	
			# of MSc graduates	Wits Graduates Roll			0	2 MSc student	



PRIORITY RESEARCH AREA 7: MINING

SPECIFIC OBJECTIVES:

Produce geoscience knowledge base to stimulate investment in the mining industry and develop small scale mining

DESIRED OUTCOME:

By 2017, mining and mineral beneficiation contributes significantly to the GDP

Table 14: PRIORITY RESEARCH AREA 7: MINING

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$	
7(a) To develop a competitive and conducive legal framework to promote investment. Ensure and promote safe, responsible and sustainable use of mineral resources	N\$ 730 000	1) Mineral Pricing Analysis	# of report on Mineral Pricing for standard market value	Annual Reports; Annual Review	MME	Annual	0	1 Report on Mineral Pricing to have a standard market value	250 000	
		2) Nuclear Fuel Cycle Legislation	# of report on the legal background study on Nuclear Fuel Cycle Legislation	Annual Reports; Annual Review	MME	Annual	0	1 Report on the legal background study on Nuclear Fuel Cycle Legislation	300 000	
		3) Research on Minerals Policy and implement new changes (e.g. the reclamation mined out area)	% of work done on revised Mineral policy	Annual Reports; Annual Review	MME, UNAM and NUST	Annual	1	Mineral policy completed	80% Work done to revised Mineral policy completed	60 000
			% of work done on revised rules and regulations for carrying mining activities			Annual	1	Rules and regulations for carrying mining activities	100% work done to revised rules and regulations for carrying mining activities	
		4) Investigation to improve Mine Safety	# of mines inspected	Annual Reports; Annual Review	MME	Annual	1	MSc student analysing safety in some selected mines	2 Mines inspected; Conduct mine safety inspections and recommend corrective measures	330 000
5) Research on drilling and blasting operation in Namibia	# of MSc graduates # of BSc Hon graduates	Annual Reports; Graduates Roll; Scientific Journals	UNAM	Annual	0		4 MSc graduates 36 BSc Hon graduates	1 400 000		

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		6) Research on mine design and development in Namibia	# of scientific publications				0	42 Scientific publications	
		7) Investigation of effect of mining operations in some selected mines in Namibia	# of scientific publications						
		8) Improvement on the performance and efficiency of extractive processes of valuable metals from primary, low grade and other alternative secondary sources in Namibia	# of scientific publications						
7(b) To promote the integration of mining with other sectors	N\$ 600 000	9) Development, characterization and testing of engineering materials from locally sourced raw materials	# of scientific publications						
		1) Investigation on public awareness on mining activities to improve processes and administration	% of progress made to report on issues addressed , and new emerging issues at information sharing session	Annual Reports; Annual Review	MIME	Annual	Information on constraints of small scale miners completing monthly returns	100% Report on issues addressed , and new emerging issues at information sharing session produced	600 000
7(c) Develop and support a vibrant and sustainable Small Scale Mining Sector	N\$ 14 870	1) Project to empower Small Scale Mining	# of Small Scale Miners empowered	Annual Reports	MIME	Annual	1 Small Scale Miner empowered	28 Small Scale Miners empowered	14 870

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		2) Construction of small scale mining infrastructure and technical support.	# of Gemstones cutting and polishing facility in Khorixas	Annual Review			0	1 Gemstones cutting and polishing facility in Khorixas	
			# of Slate Stones cutting facility in Noordoewer				1 Dormant plant to cut slate stones in Noordoewer	5 Slate Stones cutting facility in Noordoewer	
			# of workers employed at Noordoewer				Workers employed at Noordoewer	26 Workers employed at Noordoewer	
			# of technical supports - analysis of sample				1 Technical support - analysis of sample	8 Technical support - analysis of sample	
			# of pegging of claims reports				1 Pegging of claims report	8 Pegging of claims report	
			# of mineral rights information reports				1 Mineral rights information report	8 Mineral rights information report	



PRIORITY RESEARCH AREA 8: INDIGENOUS KNOWLEDGE

SPECIFIC OBJECTIVES:

Document indigenous knowledge while looking for application, innovation, verification and commercialization to suit current situation

DESIRED OUTCOME:

By 2017, Namibia has a comprehensive framework that support research in IKS, while protecting indigenous knowledge

Table 15: PRIORITY RESEARCH AREA 8: INDIGENOUS KNOWLEDGE

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$	
8(a) Strengthen linkages between research institutions and industry in IKS and R&D research and capacity building	0	1) Public Outreach on IKS issues through radio and TV talk shows, print media articles and public lectures	# of radio talk shows/interviews	NCRST Annual Reports	NCRST	Annual	0	3	0	
			# of newspaper articles on IKS	IKS Council Minutes			RST Act of 2004; Namibian Traditional Health Practitioners Bill; Access to Biodiversity and Benefit Sharing Bill	1		Radio talk shows/interviews; Live radio interview on NBC Newspaper articles on IKS
			# of public lectures on IKS issues				0	1		
8(b) Develop a database, protect, promote and preserve IKS technologies that shows potential for commercialization	N\$ 1 282 000	1) Research and Development on Indigenous Knowledge Management System for medicinal Indigenous Knowledge Systems (IKS) in Namibia 2) Unpacking the use of medicinal plants against the backdrop of biomedicine: Kavango East and West regions	# of research articles	Annual Reports	UNAM	Annual	0	4	1 092 000	
			# of technical reports	IKS Book				3		Research articles Technical reports
			# of Book (4 chapters)	Annual Reports				1		Book (4 chapters)
			# of conference presentations					2		Conference presentations
			# of PhD students				1	PhD student		
			# of MSc students				1	MSc student		

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			# of BSC Final year project students					6 BSc Final year project students	
		3) Research and development on Indigenous Knowledge System for Traditional food and beverages in Namibia	# of research articles	Annual Reports	UNAM	Annual	0	3 Research articles	190 000
			# of technical reports				1 Technical reports	3 Technical reports	
			# of conference presentations				4 Conference presentations	2 Conference presentations	
8(c) Establish IKS policy, IKS R&D platform for product development, value-addition, innovation, commercialization and development strategy.	0	1) Establishment of the Namibian Indigenous Knowledge Systems	% of progress made on the establishment of the IKS council; Approval of ToRs and work plans % work completed on the implementation of action plan of the Namibian Indigenous Knowledge Systems council	Board Approval	UNAM; NCRST	Annual	Research, Science and Technology Act (2004)	100% Approval for the establishment of the Namibian Indigenous Knowledge Systems council by the Minister (10%); Appointment of Namibian Indigenous Knowledge Systems Council members (20%); Inauguration of the Namibian Indigenous Knowledge Systems Council (30%) Approval of Terms of Reference by Board; Formulation of work plan	0

Programme /Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
8(d) Validation of IKS technologies with potential for commercialization	N\$ 800 000	2) Research on Namibian Indigenous Knowledge System	# of consultation reports	Annual Reports	NCRST	Annual	0	1 Stakeholders consultation; Consultation report developed	
			% of work completed on approved Namibian Indigenous Knowledge System Policy by cabinet	Approved Policy				100% Approved Namibian Indigenous Knowledge System Policy by cabinet.	
		1) Capacity Building: Qualifying and non-qualifying training courses for IKSC members and members of the Secretariat	# of IKSC members trained on Corporate Governance	Certificate of Participation	NCRST	Annual	0	5 IKSC members trained in Corporate Governance	0
		2) In vitro assessment of antimalarial activity of medicinal plants used by traditional healers for the potential treatment of malaria	# scientific publications	Annual Report; Graduates Roll	UNAM	Annual	0	1 Scientific article	0
		3) An investigation into the anti-neoplastic properties of Schinziohyton rauntaneneii and Colophospermum mopane					0	1 Scientific article	0
		4) Identification of bioactive plant compounds from indigenous plants with antimalarial properties					0	1 Scientific article	0

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		5) Development of novel antimalarial treatments based on ethno medicinal plants in Zambezi region					0	1 Conference presentation	0
		6) A study of the in vitro mechanistic anti-tumour properties of indigenous plants from Southern Namibia	# of MSc students				0	1 MSc student	0
		7) An investigation into the potential use of medicinal plant extracts for treatment of lower respiratory infections and diarrhoeal diseases	# of BSc Hon students				0	1 BSc Hon student	0
		8) Anti-HIV-1 and Antioxidant Activity properties of Hoodia gordonii (Asclepiadaceae)	# of scientific articles # of conference presentations # of BSc Hon graduates	Annual Reports; Graduates Roll	UNAM	Annual	0 0 0	1 Scientific article 1 Conference presentation 6 BSc Hon students	100 000
		9) Evaluation of anti-HIV and antioxidant activities of Sceletium tortuosum	# of scientific articles # of conference presentations # of BSc Hon graduates	Annual Reports; Graduates Roll	UNAM	Annual	0 0 0	1 Scientific article 1 Conference presentation 3 BSc Hon student	0

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$	
		10) Comparative study of Antioxidant properties, Polyphenols and Flavonoid contents of the tuber and bean extracts of Maramba bean (Tylosema esculentum)	# of scientific articles	Annual Reports; Graduates Roll	UNAM	Annual	0	2 Scientific article	35,000	
			# of conference presentation					1 Conference presentation		
			# of BSc Hon graduates					3 BSc Hon student		
		11) Anti-HIV, antimicrobial and antioxidant properties of Plocamium subrii, a Namibian red algae	# of scientific articles	Annual Reports; Graduates Roll	UNAM	Annual	0	0	1 Scientific article	95,000
			# of conference presentations						2 Conference presentations	
			# of BSc Hon graduates						4 BSc Hon students	
		12) Phytochemical screening, Antioxidant properties, total phenolic content and cyanogenic potential of various cassava leaves (Manihot esculenta crantz) from east Okavango and Oshikoto regions Namibia	# of scientific articles	Annual Reports; Graduates Roll	UNAM	Annual	0	0	1 Scientific article	65,000
			# of conference presentations						2 Conference presentation	
			# of BSc Hon graduates						2 BSc Hon student	
		13) Antibacterial, antioxidant and phytochemical investigation of Albizia antunesiana and Albizia anthelmintica leaves, roots and bark	# of scientific articles	Annual Reports; Graduates Roll	UNAM	Annual	0	0	1 Scientific article	100,000
			# of conference presentations						1 Conference presentation	
			% of MSc graduate completed						100% MSc student completed	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
14) Antiviral, Antibacterial and Antioxidant investigation of <i>Acacia arenaria</i> , <i>Aloe esculenta</i> and <i>Pechuel-Loeschea leubnitziae</i>			# of scientific articles	Annual Reports; Graduates Roll	UNAM	Annual	0	1 Scientific article	145,000
			# of conference presentations					1 Conference presentation	
			% of MSc graduate completed					100% MSc student completed	
15) Nutritional and Health potential of Omutete, a Namibian traditional vegetable			# of scientific article	Annual Reports; Graduates Roll	UNAM	Annual	0	1 Scientific article	100,000
			# of conference presentation					1 Conference presentation	
			# of BSc Hon graduates					4 BSc Hon students	
16) Capacity Development in NMR spectroscopy for molecular structure determination of indigenous plant extracts			# of research articles	Annual Reports; Graduates Roll	UNAM	Annual	0	4 Research articles	160,000
			# of conference presentations					3 Conference presentations	
			# of MSc students					4 MSc students	
			# of BSc Hons students					7 BSc Hons students	
17) Investigation of Potential Drug-Drug Interaction of Normal Extracts and Lead Like Enhanced (LLE) Extracts from Selected Namibian Medicinal Plants used in the Treatment of Malaria and Tuberculosis			# of research articles	Annual Reports; Graduates Rolls	UNAM	Annual	0	2 Research articles	0
			# of conference presentations					2 Conference presentations	
			# of PhD students					2 PhD student	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		18) Evaluation of antioxidant, anticancer and antimicrobial activity of selected Namibian indigenous vegetables and characterization of their phenolic compounds	# of research articles	Annual Reports; Graduates Roll	UNAM	Annual	0	2 Research articles	
			# of conference presentations					2 Conference presentations	
			# of PhD students					1 PhD	
								3 PhD student	
		19) Design and Synthesis of potential novel anti-infective agents modelled on natural product scaffolds	# of research articles	Annual Reports; Graduates Roll	UNAM	Annual	0	2 Research articles	0
			# of conference presentations					2 Conference presentations	
			# of MSc students					1 MSc student	
			# of PhD students					1 PhD student	
8(e) Expedite IKS IP policy legislation to protect IKS knowledge holders		1) Incorporate IP in the IKS policy development	% IKS Policy revised and implemented	NCRST Annual Reports	NCRST	Annual	0	100% IKS Policy revised and implemented	0
8(f) Promote research in Indigenous Knowledge System and documentation. Utilisation of social knowledge and traditions	N\$ 812 000	1) Research into IKS	# of technical Reports # of journal articles # of conference presentations	Annual Plans Scientific Journals Conference Proceedings	UNAM	Annual	0	2 Technical reports 2 Journal articles 2 Conference presentations	92,000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		2) Research on indigenous knowledge on medicinal plants in Namibia	% of work done on regional reports	Annual Report; Regional Reports	UNAM	Annual	Cabinet Resolution as per 4 th SADC conference on IKS in 2011	100% Regional reports of indigenous knowledge on medicinal plants in Namibia completed in 14 regions	720,000
		3) Interventions to promote research in Indigenous Knowledge System, social knowledge and traditions utilised	% of progress made on approval and accessibility of IKS database % of progress made on the development of student internships and database for storage of data	Annual Reports Functional IKS database	NUST	Annual	0	100% Approved and accessible IKS database 100% Student internships development and database developed	0
8 (g) - The history, experiences, aspirations of the indigenous people and their relationship with other ethnic groups - no activities were identified for the strategic initiative									
8 (h) - Role of indigenous languages & culture on development	N\$ 1 400 000	1) A comprehensive socio-cultural study of Olufuko festival	# of inception reports	Annual Reports	UNAM	Annual	0	1 Inception report	1,400,000
			# of research proposals	Project Reports			3 Research proposal		
			# of peer reviewed papers	Supervisor's Progress Reports				5 Peer reviewed papers	
			# of technical reports					5 Technical reports	
			# of local or international presentations or workshops					5 Local or international presentations or workshops	
			# of book on Olufuko festivals					1 Book on Olufuko festival	
			# of MSc/MA students studies completed					2 MSc/ MA students in their first year of studies	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
8i - Promote and document of indigenous languages- no activities were identified for the strategic initiative					UNAM	Annual	0	50 Primary school selected for pilot	38,000
8j - Identify opportunities for integrating relevant indigenous knowledge (IK) and approaches to teaching and learning of Integrated Natural Science and Health Education at the Primary school phase.	N\$ 38 000	1) Research on integrating indigenous knowledge into the teaching and learning of Integrated Natural Science and Health Education (NSHE) at the Primary School Phase (PSP).	<p># of primary schools selected for pilots</p> <p># of pre-test of learners' performance in integrated Natural Science and Health Education concepts</p> <p># of post-test of learners' performance in integrated Natural Science and Health Education concept</p> <p># of training reports</p> <p># of research report on improved teaching and learning of Integrated NSHE in Pilot Primary schools.</p> <p># of PhD or MEd students</p> <p># of scientific publications</p>	<p>Annual Report</p> <p>Research Report</p> <p>Research Report</p> <p>Pilot Report</p> <p>Research Report</p> <p>Graduates Roll</p> <p>Scientific Publication</p>	UNAM	Annual	0	<p>3 Pre-test of learners' performance in integrated Natural Science and Health Education concept</p> <p>1 Post-test of learners' performance in integrated Natural Science and Health Education concept</p> <p>1 Training report</p> <p>1 Research report on improved teaching and learning of Integrated NSHE in Pilot Primary school</p> <p>1 PhD or MEd student</p> <p>4 Scientific publications</p>	38,000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
8(k) Explore the role of indigenous knowledge in making sustainable use of scarce resources and making their science more relevant to learners' everyday lives.	0	1) Research on the role of indigenous knowledge systems in the sustainable use of scarce resources	# of primary school selected for pilots	Annual Report	UNAM	Annual	0	50 Primary school selected for pilot	0
			# of pre-test of learners' performance in integrated Natural Science and Health Education concepts	Research Report				3 Pre-test of learners' performance in sustainable use of scarce resources in the selected Primary schools	
			# of post-test of learners' performance in integrated Natural Science and Health Education concepts	Research Report				1 Post-test of learners' performance in sustainable use of scarce resources in the selected Primary schools	
			# of training reports	Pilot Report				1 Training report	
# of research report on improved teaching and learning of Integrated NSHE in Pilot Primary schools	# of PhD or MEd students	# of scientific publications	Scientific Report	1 Research report roles of indigenous knowledge in sustainable use of scarce resources in Pilot Primary schools					
			1 PhD or MEd students	4 Scientific publications					



PRIORITY RESEARCH AREA 9: SOCIAL SCIENCE AND HUMANITIES

SPECIFIC OBJECTIVES:

Address social-economic, cultural and political challenges of a rapidly evolving society in a global world

DESIRED OUTCOME:

By 2017, Namibia has developed social science and humanities research to provide solutions and policy advice of current and emerging societal challenges

Table 16: SPRIORITY RESEARCH AREA 9: SOCIAL SCIENCE AND HUMANITIES

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
9(a) Youth Unemployment & Job Creation	N\$ 300 000	1) Investigation on private and GRN Green Schemes in Namibia	# of research reports	Annual Reports	UNAM	Annual	1 Report	3 Research report	200 000
			# of policy brief reports	Research Report				1 Policy brief report	
			# of peer reviewed papers					2 Peer reviewed papers	
			# of dissemination workshops	Dissemination Workshop Reports				8 Dissemination workshops	
9(b) Violence & crime and corruption	N\$ 260 000	2) Investigation on land reform programmes	# of research reports	Annual Reports	UNAM	Annual	1 Report	3 Research report	100 000
			# of policy brief reports	Research Report				1 Policy brief report	
			# of peer reviewed papers					2 Peer reviewed papers	
			# of dissemination workshops	Dissemination Workshop Reports				8 Dissemination workshops	
9(c) Small Medium Enterprises Capacity building- no activities were identified for the strategic initiative	N\$ 260 000	1) Investigation on gender based violence (GBV) in Namibia	# of research reports	Annual Reports	UNAM	Annual	0	3 Research reports	260 000
			# of policy Brief reports	Research Report				1 Policy Brief report	
			# of peer reviewed papers					2 Peer reviewed papers	
			# of dissemination workshops	Dissemination Workshop Reports				8 Dissemination workshops	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
9(d) Mental health and wellbeing	N\$ 450 000	1) Root Causes of Poverty	# of reports on how to alleviate poverty with recommendations	Annual reports; and Research report	NPC	Annual	1 Poverty Mapping & Multiple Index of Poverty	1 Report on how to alleviate poverty with recommendations	450 000
			# of implementation plans				0	1 Implementation plan	
			# of Cabinet resolutions				0	1 Cabinet resolution	
9(e) Cultural change and social development	N\$ 820 000	1) Determinates of Economic Growth in Namibia	# of reports	Secondary Data	NPC	Annual	Reports on Poverty 2012	1 Reports on Poverty	30 000
		2) Investigation on Teenage Pregnancy	# of research reports	Annual Reports	UNAM	Annual	Report	4 Research reports	150 000
			# of policy brief reports	Research Report			1 Policy brief report	1 Policy brief report	
	# of peer reviewed papers	Dissemination Workshop Reports			2 Peer reviewed papers	2 Peer reviewed papers			
			# of dissemination workshops				8 Dissemination workshops	8 Dissemination workshops	
		3) Investigation on Women's Empowerment	# of research reports	Annual Reports	UNAM	Annual	Report	3 Research report	50 000
			# of policy brief reports	Research Report;			1 Policy brief report	1 Policy brief report	
			# of peer reviewed papers	Dissemination workshop reports			2 Peer reviewed papers	2 Peer reviewed papers	
			# of dissemination workshops				8 Dissemination workshops	8 Dissemination workshops	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		4) Investigation on Education and skills	# of research reports # of policy brief reports # of peer reviewed papers # of dissemination workshops	Annual Reports Research Report Dissemination Workshop Reports	UNAM	Annual	Report	4 Research report 1 Policy brief reports 2 Peer reviewed papers 8 Dissemination workshops	40 000
9(f) Productivity and global competitiveness- no activities were identified for the strategic initiative									
9(g) Leveraging the emerging technologies be leveraged to benefit Namibians -no activities were identified for the strategic initiative									
9(h) Promotion of good corporate governance and services delivery- no activities were identified for the strategic initiative									
9(i) Availability of relevant statistics in different sectors of Namibia Society	N\$ 125 280 000	1) Annual Economic Development Report(AEDR) 2) Labour force surveys 3) Financial inclusion Survey 4) Namibian Household, income and expenditure survey (NHIES)	# of annual economic development reports % work done on annual reports on the labour force surveys # of annual reports on Financial Inclusion in Namibia # of annual reports on the NHIES	Secondary Data NSA Annual Report; Website; Press Release; Annual Census Report NSA Annual Report; Website; Press Release; Annual Census Report NSA Annual Report; Website; Press Release; Annual Census Report	NPC NSA NSA NSA	Annual	3 Annual Economic Development Reports 1 Annual reports on 2012 survey 1 2011 survey	3 Annual reports 100% Three annual reports on the labour force surveys completed 3 Annual reports on Financial Inclusion in Namibia Report	30 000 45 000 000 45 030 000 75 000 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$				
		5) Namibia Intercensal Demographic survey (NIDS)	# of annual reports on the NIDS	NSA Annual Report; Website; Press Release; Annual Census Report	NSA		1 2006 survey	3 Annual reports on the NIDS	0				
		6) Study on protection of state copyright in ownership and provision of spatial datasets and services	# of study report with guidelines	NSA Annual Report; Website; Press Release; Annual Census Report	NSA		0	1 Study report with guidelines	130 000				
		7) Study on protection of confidential, privileged and/or sensitive spatial datasets as required by the NSDI Policy and existing NSA regulation	# of study report with guidelines	NSA Annual Report; Website; Press Release; Annual Census Report	NSA		0	1 Study report with guidelines	120 000				
9(j) Urbanization and service availability - no activities were identified for the strategic initiative													
9(k) Climate change and adaptation	N\$ 1 110 000	1) Study on climate change implication on the economy	# of reports on the study on climate change implication on the economy	Secondary Data	NPC	Annual	0	1 Climate Change implication on the economy Report based on T21 Dynamic Model	1 000 000				
								2) Investigation on Community Resilience	# of research reports	# of policy Brief reports,	# of peer reviewed papers	3 Research reports	70 000
												1 Policy Brief report	
				Dissemination Workshop Reports				2 Peer reviewed papers					

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
9(1) Standardize Namlsh	N\$ 440 000	3) Community adaptation to change in climate	# of dissemination workshops		NUST; NCRST	Annual	1 Report on collecting, collating and analysing English usage in different parts of Namibia.	8 Dissemination workshops	
			# of research reports	Annual Reports				3 Research reports	40,000
9(1) Standardize Namlsh	N\$ 440 000	1) Standardize Namibian English and provide sufficient data for linguistic, sociolinguistic and applied linguistic research. Further, it will be possible to do comparative analysis with other varieties, such as the South African English.	# of policy brief reports	Research Report	NUST; NCRST	Annual	1 Report on collecting, collating and analysing English usage in different parts of Namibia.	1 Policy Brief report	
			# of peer reviewed papers	Workshop Reports				2 Peer reviewed papers	
9(1) Standardize Namlsh	N\$ 440 000	1) Standardize Namibian English and provide sufficient data for linguistic, sociolinguistic and applied linguistic research. Further, it will be possible to do comparative analysis with other varieties, such as the South African English.	# of International Corpuse of English Namibia (ICENAM)	Annual Reports	NUST; NCRST	Annual	1 Report on collecting, collating and analysing English usage in different parts of Namibia.	5 International Corpuse of English Namibia (ICENAM)	440 000
			# of training workshops	Research Report				15 Training workshops	
9(1) Standardize Namlsh	N\$ 440 000	1) Standardize Namibian English and provide sufficient data for linguistic, sociolinguistic and applied linguistic research. Further, it will be possible to do comparative analysis with other varieties, such as the South African English.	# of publications workshops	International Corpuse of English Namibia (ICENAM)	NUST; NCRST	Annual	1 Report on collecting, collating and analysing English usage in different parts of Namibia.	15 Publications workshops	
			# of research reports	Workshop Reports				2 Research reports	
9(1) Standardize Namlsh	N\$ 440 000	1) Standardize Namibian English and provide sufficient data for linguistic, sociolinguistic and applied linguistic research. Further, it will be possible to do comparative analysis with other varieties, such as the South African English.	# of publications		NUST; NCRST	Annual	1 Report on collecting, collating and analysing English usage in different parts of Namibia.	10 Publications;	
								2 Research reports	
9(1) Standardize Namlsh	N\$ 440 000	1) Standardize Namibian English and provide sufficient data for linguistic, sociolinguistic and applied linguistic research. Further, it will be possible to do comparative analysis with other varieties, such as the South African English.			NUST; NCRST	Annual	1 Report on collecting, collating and analysing English usage in different parts of Namibia.	In collaboration with UNAM and Giessen University, organize workshops to train staff and communicate findings and collect field data	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
9(m) Cooperative farming model for resettled small scale farmers in Namibia	N\$ 200 000	1) Focus on business innovation and creativity for resettled small scale farmers in Namibia	# of model of cooperative farming	Data Collection Report	MoL	Annual	0	1 Model of cooperative farming	145 000
			% of successful small scale farmers operating as cooperatives	Final Research Report				100% Successful small scale farmers operating as cooperatives	
9(n) Increase research output	N\$ 820 000	1) Open and Distance Learning (ODL): Research on the effectiveness of CES vacation schools 2) Research on challenges of ODL writers and editors at the UNAM 3) Research on mobile devices as tools for student support 4) The implications of the effective implementation of the teenage pregnancy policy in schools (Duration 6 months)	# of refereed publications in ODL on student support	Data Collection Report; Final Research Report	UNAM	Annual	0	1 Refereed publications in ODL on student support	125 000
			# of refereed publications in ODL materials development	Data collection report and Final Research report	UNAM	Annual	0	1 Refereed publications in ODL materials development	
			# of refereed publications in ODL focussing on mobile learning		UNAM	Annual	0	1 Refereed publications in ODL focussing on mobile learning	150 000
			# of research reports	Annual Reports	UNAM	Annual	0	1 Research report	
# of research publications	Research Report						1 Research publication		
# of PhD graduates	Graduates Roll						1 PhD graduate		
# of MSc graduates							1 MSc graduate		
# of 4th Year B.Ed. graduates							1 4th Year B.Ed. Graduate		

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
9(o) Improve quality of teaching, learning and programmes	N\$ 2 925 000	5) Searching for greener pastures in Angola: A case study for a Namibian Entrepreneur (Duration 12 months)	# of research reports # of research publication #of PhD graduates # of MSc graduates # of 4th Year B.Ed. graduates	Annual Reports Research Report Graduates Roll	UNAM	Annual	0	1 Research report 1 Research publication 1 PhD graduate 1 MSc graduate 1 4th Year B.Ed. Graduate	150 000
		6) Assessing the effectiveness of the newly introduced Research, Science and Technology (Act 23) of 2004, on Research Practice in Namibia (Duration 12 months)	# of research reports # of research publication # of PhD graduates # of MSc graduates # of 4th Year B.Ed. graduates	Annual Reports Research Report Graduates Roll	UNAM	Annual	Research, Science and Technology (Act 23) of 2004	1 Research report 1 Research publication 2 PhD graduates 1 MSc graduate 2 4th Year B.Ed. graduates	150 000
		1) Investigating assessment strategies used by lecturers at Rundu Campus in relation to the Assessment policy of the University of Namibia. (Duration 12 months)	# of research reports # of research publications #of PhD graduates # of MSc graduates # of 4th Year B.Ed. graduates	Annual Reports Research Report Graduates Roll	UNAM	Annual	0	1 Research report 7 Research publications 1 PhD graduate 2 MSc graduates 8 4th Year B.Ed. graduates	150 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		2) A critical investigation of the status of science teaching facilities and equipment in relation to the curriculum in schools around Rundu town (Duration 1 year 5 months)	# of research reports # of research publications # of PhD graduates # of MSc graduates # of 4th Year B.Ed. graduates	Annual Reports Research Report Graduates Roll	UNAM	Annual	0	1 Research report 1 Research publication 1 PhD graduate 1 MSc graduate 1 4th Year B.Ed. Graduate	225 000
		3) Investigating the challenges faced by fourth year student-teachers enrolled for the Bachelor of Education degree Primary during SBS (Duration 2 years)	# of research reports # of research publications # of PhD graduates # of MSc graduates # of 4th Year B.Ed. graduates	Annual Reports Research Report Graduates Roll	UNAM	Annual	0	1 Research Report 1 Research Publication 1 PhD graduate 1 MSc graduate 1 4th Year B.Ed. Graduate	300 000
		4) The implications of the effective implementation of the teenage pregnancy policy in schools (Duration 6 months)	# of research reports # of research publications # of PhD graduates # of MSc graduates # of 4th Year B.Ed. graduates	Annual Reports Research Report Graduates Roll	UNAM	Annual	0	1 Research Report 1 Research Publication 1 PhD graduate 1 MSc graduate 1 4th Year B.Ed. Graduate	150 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$	
		5) Assessing the leadership skills of principals in managing schools in the Kavango region (Duration 12 months)	# of research reports	Annual Reports	UNAM	Annual	0	1 Research Report	300 000	
			# of research publications	Research Report				1 Research Publication		
			# of PhD graduates	Graduates Roll				1 PhD graduate		
			# of MSc graduates					1 MSc graduate		
			# of 4th Year B.Ed. graduates					1 4th Year B.Ed. Graduate		
			# of research reports	Annual Reports				1 Research Report		
			# of Research Publication	Research Report				1 Research Publication		
	6) Grade seven teachers' approach towards the maintenance of discipline in their classrooms in Rundu Circuit (Duration 12 months)			# of research reports	Annual Reports	UNAM	Annual	0	1 Research Report	150 000
				# of Research Publication	Research Report				1 Research Publication	
				# of PhD graduates	Graduates Roll				1 PhD graduate	
				# of MSc graduates					1 MSc graduate	
				# of 4th Year B.Ed. graduates					1 4th Year B.Ed. Graduate	
				# of research reports	Annual Reports				1 Research Report	
				# of research publications	Research Report				1 Research Publication	
7) Strategies employed by school management in maintaining the grade 12 pass rate: The case study for St. Boniface College in the Kavango region. (Duration 12 months)			# of research reports	Annual Reports	UNAM	Annual	0	1 Research Report	150 000	
			# of research publications	Research Report				1 Research Publication		
			# of PhD graduates	Graduates Roll				1 PhD graduate		
			# of MSc graduates					1 MSc graduate		
			# of research reports	Annual Reports				1 Research Report		
			# of research publications	Research Report				1 Research Publication		
			# of PhD graduates	Graduates Roll				1 PhD graduate		

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		8) Factors affecting grade three learners' cognitive development in mathematics in Rundu Circuit (Duration 1 year 6 months)	# of research report # of research publications # of PhD graduates # of MSc graduates # of 4th Year B.Ed. graduates	Annual Reports Research Report Graduates Roll	UNAM	Annual	0	1 Research Report 1 Research Publication 1 PhD graduate 1 MSc graduate 1 4th Year B.Ed. Graduate	300 000
		9) Investigating Ethno-mathematics in Kavango Region (Duration 12 months)	# of research reports # of research publication # of PhD graduates # of MSc graduates # of 4th year B.Ed. graduates	Annual Reports Research Report Graduates Roll	UNAM	Annual	0	1 Research Report 1 Research Publication 1 PhD graduate 1 MSc graduate 1 4th Year B.Ed. Graduate	150 000
		10) Investigating how subsistence farming could enrich the teaching and learning of natural science (Duration 1 year 5 months)	# of research reports # of research publications # of PhD graduates # of MSc graduates # of 4th year B.Ed. graduates	Annual Reports Research Report Graduates Roll	UNAM	Annual	0	1 Research Report 1 Research Publication 1 PhD graduate 1 MSc graduate 1 4th Year B.Ed. Graduate	300 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		11) Investigating the numeracy strategies taught at the former Rundu College of Education and the implementation of these strategies in schools in Kavango region (Duration 2 years)	# of research reports	Annual Reports	UNAM	Annual	0	1 Research Report	300 000
			# of research publications	Research Report				1 Research Publication	
		12) Perceptions of 1st year B. Ed students toward Basic Mathematics at the University of Namibia: Rundu Campus (Duration 12 months)	# of PhD graduates	Graduates Roll	UNAM	Annual	0	1 PhD graduate	150 000
			# of MSc graduates	Research Report				1 Research Publication	
9(p) Enhance community engagement	N\$ 600 000	1) Levels of knowledge of School Board Members in relation to School Board governing educational policies (Duration 12 months)	# of 4th Year B.Ed. graduates	Graduates Roll	UNAM	Annual	0	1 MSc graduate	150 000
			# of research reports	Annual Reports				1 Research Report	
			# of research publications	Research Report				1 Research Publication	
			# of PhD graduates	Graduates Roll				1 PhD graduate	
			# of MSc graduates	Graduates Roll				1 MSc graduates	
			# of 4th Year B.Ed. graduates	Graduates Roll				1 4th Year B.Ed. Graduate	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		Challenges encountered by school inspectors in the recruitment, monitoring and evaluation of principals in the Kavango region (Duration 2 years)	# of research reports	Annual Reports	UNAM	Annual	0	1 Research Report	300 000
			# of research publications	Research Report				1 Research Publication	
		Challenges encountered by school inspectors in the recruitment, monitoring and evaluation of principals in the Kavango region (Duration 2 years)	# of PhD graduates	Graduates Roll	UNAM	Annual	0	1 PhD graduate	300 000
			# of MSc graduates					1 MSc graduate	
		Challenges encountered by school inspectors in the recruitment, monitoring and evaluation of principals in the Kavango region (Duration 2 years)	# of 4th Year B.Ed. graduates	Graduates Roll	UNAM	Annual	0	1 4th Year B.Ed. Graduate	150 000
			# of research reports					Annual Reports	
		Critical examination of the relevance of acquired literacy skills in addressing practical needs of informal traders at the Rundu open markets, Kavango region (Duration 12 Months)	# of research publications	Research Report	UNAM	Annual	0	1 Research Publication	150 000
			# of PhD graduates	Graduates Roll				1 PhD graduate	
		Critical examination of the relevance of acquired literacy skills in addressing practical needs of informal traders at the Rundu open markets, Kavango region (Duration 12 Months)	# of MSc graduates	Graduates Roll	UNAM	Annual	0	1 MSc graduate	150 000
			# of 4th Year B.Ed. graduates					1 4th Year B.Ed. Graduate	



PRIORITY RESEARCH AREA 10: LOGISTICS

SPECIFIC OBJECTIVES:

Promote network design, equipment and systems to facilitate the attainment of objectives of the NDP4 toward infrastructure solutions to deal with innovative traffic management, information systems, and efficient logistics and maintenance technologies

DESIRED OUTCOME:

By 2017, Namibia's policy and strategy on road infrastructure systems is developed base of on evidence from research

Table 17: SPRIORITY RESEARCH AREA 10: LOGISTICS

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
10(a) - Research into the requirements for a successful port-centric logistics hub. This includes infrastructure, service requirements, intermodal transport capabilities, etc. - no activities were identified for the strategic initiative									
10(b) Carry out research into infrastructure and transport and needs with specific reference to international connectivity using Intermodal transport	N\$ 110 000 000	1) Investigation into building the Okahandja-Otjivarongo railway connection	# of data collection reports # of final research reports	Data Collection Report Final Research Report	HEIs	Annual	0	1 Data collection report 1 Final research report completed	22 000 000
		2) Geotechnical Investigation: Cracking and movement of railway embankment on Kruin-Gamams and Gamams-Hoffnung railway sections	# of data collection reports # of final research reports	Data Collection Report Final Research Report	HEIs	Annual	0	1 Data collection report completed 1 Final research report	22 000 000
		3) Geotechnical Investigation: Geometrical deficiencies on Mariental-Hardap railway section	# of data collection reports # of final research reports	Data Collection Report Final Research Report	HEIs	Annual	0	1 Data collection report completed 1 Final research report	22 000 000
		4) Research into railway vehicle dynamic for Namibia	# of research reports # of scientific publications # of BSc Hon Students % work completed by MSc students	Data Collection Report Final Research Report Graduates Rolls Annual Reports	UNAM	Annual	1 Analytical methodological solution to dynamic of railway vehicles 0 0	1 Research reports 4 Scientific publications 1 BSc Hon 50% work completed by MSc students 1 MSc student	22 000 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		5) Development and design of a smart railway signalling for Namibia	% work completed on improved system design	Data Collection Report; Final Research Report	UNAM	Annual	0	100% Improved system design	22 000 000
10(c) Encourage investment in local innovation in the transport/logistics sector;	N\$1 550 000	1) Research into traffic road safety in Namibia, and benchmarking international best practice	# of research reports	Research Output Report	NUST	Annual	0	1 Research proposal	600 000
			# of stakeholder research facilitation workshops	Annual Reports				1 Stakeholder research facilitation workshop	
			# of recommendation and implementation reports					1 Recommendation and implementation report	
			# of BA Hon graduates	Graduates Rolls				6 BA Hons	
			% of studies completed by MA graduates					100% three MA studies completed	
			% of studies completed by PhD students					70% PhD study completed	
		2) Establish a dedicated car terminal for new vehicles at the Port of Walvis Bay on a PPP basis	% of tender documents awarded	Namport Property Department availability of site confirmation; Expression of Interest Advertisement in newspaper; Board Resolution	NAMPORT	Annual	0	100% Tender document awarded	0

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			% project action steps completed	Signed contract/s				100% Project action steps completed	
		3) Navigate uncertainty and complexity of higher education and the dilemma of employability in Namibia	# of research reports	Research Output Report	NUST	Annual	Logistics graduate employability are they on the right road? Based on findings	1 Research proposal	400 000
			# of stakeholder research facilitation workshops	Annual Reports				1 Stakeholder research facilitation workshop	
			# of recommendation and implementation reports					1 Recommendation and implementation report	
			# of BA Hon graduates	Graduates Roll				6 BA Hons	
			% of studies completed by MA students graduates					100% MA studies completed	
			% of studies completed by PhD student		100% PhD study completed				
		4) Investigate whether logistics and transport degree applicants are representative of all Namibia's communities	# of research reports	Research Output Report	NUST	Annual	0	1 Research proposal	250 000
			# of stakeholder research facilitation workshops	Annual Reports				1 Stakeholder research facilitation workshop	
			# of recommendation and implementation reports					1 Recommendation and implementation report	
			# of BA Hon graduates	Graduates Roll				6 BA Hon	
			% of studies completed by MA students graduates					100% MA studies completed	
			% of studies completed by PhD student		100% PhD study completed				

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		5) Investigating the relevance of Logistics degrees to industry, and researching into the importance of professional logisticians to Namibia	# of research reports # of stakeholder research facilitation workshops	Research Output Report Annual Reports	NUST	Annual	0	1 Research proposal 1 Stakeholder research facilitation workshop	300 000
			# of recommendation and implementation reports # of BA Hon graduates # of BA Hon graduates % of studies completed by MA students graduates % of studies completed by PhD student	Graduates Roll Graduates Roll				1 Recommendation and implementation report 6 BA Hons 6 BA Hons 100% MA studies completed 70% PhD study completed	



PRIORITY RESEARCH AREA 11: ENVIRONMENT AND TOURISM

SPECIFIC OBJECTIVES:

Maintain and enhance the quality and sustainability of the environment and to integrate environmental concerns in all developmental policies and improve the tourism industry for better service delivery technologies

DESIRED OUTCOME:

By 2017, Namibia's environment and tourism sector is the most competitive in the Africa as results of research and innovation solutions

Table 18: SPRIORITY RESEARCH AREA 11: ENVIRONMENT AND TOURISM

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
11(a) Strengthen research and development activities that would promote sustainable development especially of ecosystems and ecological processes	N\$ 24 198 549	1) Research on timber stock in different forest types	# of research reports on the recommendations on tree communities, tree growth, standing timber stock and sustainable harvesting rates	Research Reports	NUST	Annual	0	3 Research reports on the recommendations on tree communities, tree growth, standing timber stock and sustainable harvesting rates	176 802
			# of scientific publications	Scientific Publications			Forest inventories of Directorate of Forestry	16 Scientific publications	
		2) Research on forest regeneration, growth, threats and trends in different forest types (Task ID 038	# of assessments of all regeneration trials # of scientific publications % work completed of research on natural tree regeneration, assisted tree regeneration, tree growth, most important threats to and trends in Namibia's forests	Research Reports Scientific Publications Research Reports	NUST	Annual	1 0	3 Assessments of all regeneration trails 4 Scientific publications 100% Research reports on natural tree regeneration, assisted tree regeneration, tree growth, most important threats to and trends in Namibia's forests completed	2 438 126

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$		
		3) Develop a national monitoring plan for forestry in Namibia (Task ID 033)	% of work completed on monitoring framework for rapid appraisal of forest change at national and local levels.	Annual Reports	NUST	Annual	0	100% Monitoring framework for rapid appraisal of forest change at national and local levels completed	2 100 040		
			# of PhD graduates	Graduates Roll			0	2 PhD graduates			
			# of scientific publications	Research Report			Forest inventories; Calculated data from Satellite imagery	4 Scientific publications			
		4) Research on the impact of floods and other factors on riparian trees in ephemeral rivers of the Namib			# of poster & publications	Publication	NUST	Annual	Previous work in the Kuiseb and Hoanib Rivers	1 Poster & publication	21 200
		5) Strengthening a regional Biodiversity Observation Network in the region (TaskID 159)			# of additional observatories and have these annually monitored established	BIOTA observatories annual reports	NUST	Annual	21 BIOTA observatories	57 Additional observatories and have these annually monitored established	
6) Monitoring of ecosystem integrity in ephemeral rivers as indicator of climate change			# of technical reports	Annual Report; Scientific Journals	MET	Annual	0	6 Technical reports	250 000		
			# of peer-reviewed papers				Previous work in a number of rivers, Uranium SEMP monitoring programme	2 Peer-reviewed papers			

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		7) Restoration of degraded rangeland	# of technical reports	Annual Reports; Scientific Journals	MET	Annual	0	5 Technical reports	350 000
			# of peer-reviewed papers				European Union Rangeland monitoring Project; LDN Project; Otjozondjupa IRLUP	2 Peer-reviewed papers	
		8) Restoration standards and guidelines for arid ecosystems	# of technical reports	Annual Reports; Scientific Journals	MET	Annual	0	1 Technical report	400 000
			# of peer-reviewed papers				2 Peer-reviewed papers		
		9) Ecological study on elephants	# of updates technical reports	Annual Reports	MET	Annual	0	6 Updates technical reports	1 200 000
			# of peer-reviewed papers				Technical report 2013	1 Peer-reviewed papers	
			# of intern students				0	1 Intern student	
			# of revised strategy on the management of elephants				Strategy on the management of elephants	1 Revised strategy on the management of elephants	
			% work completed on PhD				0	70% PhD student in progress	
		10) Study on the ecology of Pachypodium namaquanum	% of work completed in PhD study	Supervisor Progress Report	MET	Annual	Survey conducted in 2012 by MET in collaboration with South Africa's SANBI	70% PhD student in progress	100 000
		11) Monitoring migratory bird species	# of technical reports	Annual Reports	MET	Annual	1 Technical report of 2013	8 Technical reports	600 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$		
		12) Capacity building on annual game counts	# of game count census	Annual Reports	MET	Annual	1 Game count census 2013	8 Game count census	700 000		
			# of SADC wildlife experts contracted				0	1 SADC wildlife expert contracted			
			# of guidelines on wildlife demographic analysis	Guideline Document			0	1 Guideline on wildlife demographic analysis			
			# of training workshops	Annual Reports			0	2 Training workshops			
		13) A Critical Assessment of the Economic and Environmental Sustainability of the Namibian Indigenous Forest/ Timber Industry (TaskID 035)		% work completed on species management plan	Annual Reports	IRDNC; SASSCAL	Annual	0	100% Species management plan available	2 745 176	
		14) Examine impact of predicted altered climate and reduced fog along the Namib coast as a result of warming of the Benguela (TaskID 054)		# of technical reports	Weather Station Data	MET	Annual	1 Technical reports	7 Technical reports	2 068 523	
					# of long term observations and long term data planning report	Remote Sensing Data Report		1 Long term observation and long term data planning report	3 Long term observation and long term data planning reports		
					% of work completed on data management system	Annual Reports		0	100% Data management system established		
		15) Development of Regional Masters Programme on Dryland Forestry (TaskID 079)		# of new M.Sc. Degrees established	Annual Reports	SASSCAL; NUST	Annual	0	1 New MSc. Degree established	1 712 166	
# of MSc students	Graduates Roll						2 MSc students				

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			# of MSc students registered for 2016/17					4 MSc students registered for 2016/17	
		16) The impacts of fire on biodiversity and ecosystem processes in woodland savanna (TaskID 148)	% work completed on the intervention on the impacts of fire on biodiversity and ecosystem processes in woodland savanna	Field Surveys	NUST	Annual	0	100% Intervention on the impacts of fire on biodiversity and ecosystem processes in woodland savanna completed	2 149 992
		17) Camera trap survey of Lion, Spotted Hyena in KNP.	# of surveys conducted	MET Report	MET	Annual	0	4 Camera trap survey of Lion, Spotted Hyena in KNP conducted	10 000
			# of survey reports					2 Survey report	
		18) National Cheetah Survey conducted	% of national cheetah programme completed in two study sites	MET Report	MET	Annual	0	100% National cheetah programme completed in two study sites	100 000
		19) National Bird Atlas Programme under SABAP2 initiated and implemented	# of surveys completed	Met Report	MET	Annual	0	3 National Bird Atlas surveys	100 000
		20) Zebra Hybridization Project initiated in Western Etosha National Park	# of telemetry devices procure and deployed	Met Report	MET	Annual	0	28 Telemetry devices on 14 zebras (7 HMZ & 7 PZ) in western Etosha procure and deployed	200 000
			# of genetic samplings conducted					100 Genetic sampling from at least 50 zebra in western Etosha, and submit to the laboratories for analysis conducted	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			# of progress reports compiled and submitted to the ENP management and other relevant stakeholders					1 Progress report submitted to the ENP management and other relevant stakeholders	
		21) Crocodile population study (Kunene & Kavango)	# of crocodiles fitted with movement devices and DNA typed # of reports # of crocodile management plan approved # of papers presented	MET Report	MET	Annual	40	120 Crocodiles captured and fitted with telemetry devices 2 Reports produced and submitted to relevant stakeholders 1 Crocodile management plan 1 Paper on crocodiles to be presented in France	500 000
		22) Research wildlife disease with economic impact or risk to Domestic animals and humans	% of baseline data on a number key wildlife diseases collected	MET Report	MET	Annual	0	100% Data on a number key wildlife diseases collected	100 000
		23) Movement study in KAZA TFCA conducted	% of movement study in TFCA KAZA conducted, interim report and maps produced	MET Report	MET	Annual	0	100% Movement study in TFCA KAZA conducted and interim report and maps produced	1 500 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		24) Wildlife movements studied through the collaring of game in the Greater Sossusvlei Namib Landscape	# of springbooks collared	MET Report	MET	Annual	18 Collars on springbook in the GSNL	14 Collars on springbook in the GSNL, study movements and produce reports	1 600 000
		25) DNA samples collected from Black Faced Impala in ENP submitted to the Genetic Laboratory for further processing and analysis	# of black faced impala DNA samples submitted to the Laboratory and report produced	MET Report	MET	Annual	0	80 Black faced impala DNA samples submitted to the Laboratory and report produced	100 000
		26) Large predator (lion and hyenas) collared in Etosha as indicator of large carcass clusters	# of large carnivours collared	MET Report	MET	Annual	0	100 Large carnivores collared	0
		27) Namibian elephant population data collated, analysed and report produced.	% of work completed on the report on Namibian elephant population data collated	MET Report	MET	Annual	0	100% Namibian elephant population data collated, analysed and report produced	
		28) Unique Wetland Ecosystems sustainably managed	# of wetlands of international importance managed according to approved management plans	MET Report	MET	Annual	0	1 Management plan for the Bwabwata-Okavango and Orange River Ramsar Site	250 000
		29) Assessment of elephant trophy quality produced	# of reports produced on elephant trophy quality	MET Report	MET	Annual	0	1 Report on assessment of elephant trophy quality produced	20 000
		30) DNA typing and marking of Erindi Elephant	% work completed on Erindi Elephant DNA typed and marked	MET Report	MET	Annual	0	100% DNA typing and marking of Erindi Elephant completed	270 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
11(b) - Promote STI in marketing Namibia's tourism resources- no activities were identified for the strategic initiative									
11(c) Develop and adopt relevant technologies in the operations of tourism industries	N\$ 42 907 000	1) Policy Planning and Legislation: NTGDS and NIPPS	% work completed on NTGDS and NIPPS	MET Report	MET	Annual	0	100% NTGDS and NIPPS finalised and approved	4 500 000
		2) Policy Planning and Legislation: National Tourism Bill	% work completed on National Tourism Bill	MET Report	MET	Annual	0	100% National Tourism Bill finalised	200 000
		3) Policy Planning and Legislation: Gaming and Entertainment Control Bill	% work completed on Gaming and Entertainment Control Bill approved	MET Report	MET	Annual	0	100% Gaming and Entertainment Control Bill approved	1 000 000
		4) Policy Planning and Legislation: Regulations of the Gaming & Entertainment Control Act	% work completed on regulations of the Gaming & Entertainment Control Act gazetted	MET Report	MET	Annual	0	100% Regulations of the Gaming & Entertainment Control Act gazetted	500 000
		5) Policy Planning and Legislation: Lotteries Bill	% work completed on Lotteries Bill approved	MET Report	MET	Annual	0	100% Lotteries Bill approved	200 000
		6) Policy Planning and Legislation: Regulations of the Lotteries Act	% work completed on regulations of the Lotteries Act gazetted	MET Report	MET	Annual	0	100% Regulations of the Lotteries Act gazetted	300 000
		7) Policy Planning and Legislation: Administration functions executed	% work completed on administration functions executed	MET Report	MET	Annual	0	100% PMs System coordinated	1 000 000
		8) Policy Planning and Legislation: Capacity built and developed in gaming operating systems	# of interventions participated	MET Report	MET	Annual	0	2 Interventions for capacity building	1 000 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		9) Improve on Regulation of Gaming activities: Gaming operators registered. (lotteries, gambling machines)	# of operators registered	MET Report	MET	Annual	265 operators registered	100 New operators registered	
		10) Communal land tenure system for tourism investment: Communal Land Tenure System Support	% work completed on Guiding Framework document on Communal Land Tenure System support	MET Report	MET	Annual	0	100% Guiding Framework document on Communal Land Tenure System Support completed	300 000
		11) Monitor & Evaluate performance of SOEs: Strategies and business plans in line with TGDS & IPS	% work completed on strategies and business plans reviewed and harmonised	MET Report	MET	Annual	0	100% Strategies and business plans in line with TGDS & IPS reviewed and harmonised	1 000 000
		12) Monitor & Evaluate performance of SOEs: SOEs compliances to performance agreements	# of agreements	MET Report	MET	Annual	0	3 Performance agreements	1 300 000
		13) Promotion and marketing interventions conducted	# of fairs and expos attended	MET Report	MET	Annual	0	5 Fairs and expos attended; Coordinate attendance of Marketing and Promotional event at local, regional, and International level	50 000 000
		14) Monitor & Evaluate performance of SOEs: Road shows and presentations held at international forums	# of road shows organised	MET Report	MET	Annual	0	1 Road show organised; Facilitate road shows and presentations at international forums	0

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		15) Monitor & Evaluate performance of SOEs: NWR facilities well maintained	# of facilities maintained & improved	MET Report	MET	Annual	0	5 Facilities maintained & improved; Coordinate site visits and review quarterly reports	20 000 000
		16) Improve coordination with SOEs: Mutual relationship strengthened	# of meetings held	MET Report	MET	Annual	0	2 Meetings held for mutual relationship strengthened; Facilitate quarterly meetings with SOEs; Address emerging coordination challenges	250 000
		17) Improve coordination with the private sector and relevant stakeholder: Stakeholders relationship strengthened	# of meetings held	MET Report	MET	Annual	0	4 Meetings for stakeholders relationship strengthened; Organise meetings (FENATA, ETEA, HAN, Air Namibia, MoHAI)	500,000
		18) Support infrastructure development of SOEs: NWR infrastructure redevelopment supported	# of reports	MET Report	MET	Annual	0	1 Infrastructure assessment needs report; Facilitate joint survey for infrastructure assessment needs (consultants & DPTS)	500 000
		19) Support infrastructure development of SOEs: Development of International Conference Centre	# of consultations	MET Report	MET	Annual	0	4 Consultations for promotion of Development of International Conference Centre	2 300 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		20) Tourism awareness interventions	# of interventions	MET Report	MET	Annual	0	5 Interventions for the Tourism awareness thorough support tourism awareness workshops in the 4 regions; Facilitate world Tourism day celebration; Coordinate Cultural tourism summit; Oversee and evaluate ATW's cost benefit analysis; Organise the Namibia guest of honour event in Colmar; Facilitate women in Tourism summit; Facilitate Youth in Tourism summit; Initiate sustainable destination leadership network	8 500 000
		21) Community Based Tourism development: Community lodges handed over to beneficiaries	# of lodges/B&Bs handed over to beneficiaries	MET Report	MET	Annual	0	7 Lodges/B&Bs handed over to beneficiaries; (Ensure assessment of interventions; Monitor implementation through site visits; Develop Implementation strategy)	1 000 000
		22) Community Based Tourism development: Beneficiaries trained in Tourism Business Development in collaboration with NTB	# of community members trained	MET Report	MET	Annual	0	10 Community members trained	2 000 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		23) Community Based Tourism development: JVs of lodges and B & B's facilitated	# of Joint Venture of lodges and Bed & Breakfasts facilitated	MET Report	MET	Annual	0	7 Joint Venture of lodges and Bed and Breakfasts facilitated	500 000
		24) Community Based Tourism development: Marketing tools for beneficiary projects	% work completed on Marketing tools for beneficiary projects developed	MET Report	MET	Annual	0	100% Marketing tools for beneficiary projects developed	1 000 000
		25) Community Based Tourism development: Consultative Local Authorities and other stakeholders meetings	# of consultative meetings with Local Authorities and other stakeholders meetings conducted	MET Report	MET	Annual	0	4 Consultative meetings with Local Authorities and other stakeholders meetings conducted	500 000
		26) Facilitate training of personnel in the tourism industry line with the NHRDP and the National Growth Strategy: Personnel in Tourism industry capacitated	# of students trained	MET Report	MET	Annual	20 Student trained	1 Student trained	200 000
		27) Tourism research and statistics: Statistical Report 2013	% work completed on tourism research and statistics	MET Report	MET	Annual	0	100% Statistical Report 2013 printed	357 000
		28) Tourism research and statistics: Tourism Domestic survey conducted	% work completed on Tourism Domestic survey conducted and report produced	MET Report	MET	Annual	0	100% Tourism domestic survey conducted and report produced	3 000 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		29) Strengthen national, regional and international tourism relations (United Nations World Tourism Organization (WTO), Regional Tourism Organization of Southern Africa (RETOSA), and TFCAs): Regional Tourism relationships, marketing and promotion strengthened	# of meetings attended	MET Report	MET	Annual	0	2 Meetings attended through facilitated RETOSA Planning/TSA meetings	300 000
		30) Strengthen national, regional and international tourism relations (United Nations World Tourism Organization (WTO), Regional Tourism Organization of Southern Africa (RETOSA), and TFCAs): Tourism bilateral and multilateral cooperation relationships strengthened	# of agreements/MoUs	MET Report	MET	Annual	3 Agreements/MoUs	4 Agreements/MoUs	2 000 000
11(d) Further the development and involvement of communities in tourism and associated services	N\$ 200 000	1) What works in HIV and AIDS and the world of work in the Southern African and Namibian tourism industry	# of research reports	Annual Reports	NUST	Annual		1 Research report	200 000
			# of research publications	Research Report				2 Research publications	
			# of MSc graduates	Graduates Roll				1 MSc graduate	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
11(e) Carry out research on Environmental Electromagnetic pollution due to ICT Infrastructure	N\$ 450 000	1) Electromagnetic Environmental pollution due to radiations from Transmitters	# of final research report on the radiation levels	Annual Reports	UNAM	Annual	0	1 Final research report on the radiation levels 2 Namibian students trained in Electromagnetic Environmental Pollution Characterisation through two undergraduate honors research projects	250 000



PRIORITY RESEARCH AREA 12: MANUFACTURING TECHNOLOGY

SPECIFIC OBJECTIVES:

Create an environment where the cooperation's of foreign and local researchers and firms work together in the development of local technology, content and industry in general

DESIRED OUTCOME:

By 2017, ICT availability of latest technology scores improves as a result of research and innovation

Table 19: SPRIORITY RESEARCH AREA 12: MANUFACTURING TECHNOLOGY

Programme / Initiatives	INPUT Total budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
12(a) Strengthen systems and mechanisms for acquisition, assessment, adaptation, adoption and application of essential technologies for industrial beneficiation processes and activities to ensure effectiveness and efficiency of product output and high quality of products	N\$ 250 000	1) Optimizing machining process	# of research reports	Annual Research Reports	UNAM	Annual	0	1 Research report	250 000
			# of scientific publications	Annual Reports			MSc student in 2010	3 Scientific publications	
			# of BSc Hons	Graduates Roll			0	1 BSc Hon	
12(b) Encourage R&D programs that develop tools, equipment and machinery for existing, emerging and potential industries -no activities were identified for the strategic initiative									
12(c) Encourage quality assurance in manufacturing	N\$ 15 000	1) Factors Hampering Manufacturing in Namibia: Analysis of Value Chains	# of value chain analysis reports	Secondary Data on Value Chain	NPC	Annual	0	1 Report on Value Chain	15 000
12(d) Utilise science and technology in improving national standardization, packaging and quality management programmes- no activities were identified for the strategic initiative									
12(e) Promote the adoption of standards for the production of goods and services for the local and international markets	N\$ 200 000	1) Research into the designing and manufacturing of Marula juice	# of research reports	Annual Research Report;	UNAM	Annual	0	2 Research reports	200 000
			# of BSc Hon. design reports	Annual Reports; Graduates Roll				2 BSc Hon. design reports	
			# of scientific publications					3 Scientific publications	

Programme / Initiatives	INPUT Total budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			% work completed to extract juice from Marula fruits					100% work completed to extract juice from Marula fruits	
12(f) Promote Science & Technology activities that would accelerate technology transfer and innovations	N\$ 1 330 000	1) Host dragon's den (pitch)	# of dragon's den hosted and attended	Annual Reports	NCRST	Annual	0	1 Dragon's den hosted and attended	120 000
		2) Design and implement an automatic programmable Oshifima cooker	# of designs report # of prototypes for the designed Oshifima cooker	Annual Research Report	UNAM	Annual	0	1 Designs report 1 Prototype for the designed Oshifima cooker	500 000
		3) Design of low cost spectrophotometer	# of optimized prototypes # of research reports # of scientific publications # of BSc Hon. design reports	Annual Research Report; Graduates Roll	UNAM	Annual	0	1 Optimized prototype 2 Research reports 2 Scientific publications 2 BSc Hon. design reports	110 000
		4) Promote computer programming skills through national competitions	# of national programming skills competitions	Annual Reports	UNAM	Annual	1	1 National programming skills competitions 2013	135 000

Programme / Initiatives	INPUT Total budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
12(g) Create incentives to promote investment and support in research and development by the private sector	N\$ 4 370 000	1) Production based engineering economics growth strategy and V2030	# of fully functional production function computer-based economic simulation model for V2030	Annual Report; Annual Research Reports; Graduates Roll	UNAM	Annual	Existing research proposal under the previous research collaborations between UNAM and Bank of Namibia	1 Fully functional production function computer-based economic simulation model for V2030	4 000 000
			# of action plans for strategy implementation					1 Action plan for strategy implementation	
			# of R&D, innovation, value addition and funding strategies in support of V2030					1 R&D, innovation, value addition and funding strategies in support of V2030	
			# of scientific publications					2 Scientific publications	
			# of technical reports					3 Technical reports	
			# of workshops					1 Workshops	
			# of conferences					1 Conference	
			# of M.Sc students					2 MSc students	
			# of MSc (Civil Engineering) graduates					1 MSc (Civil Engineering) graduate	
			# of scientific publications					2 Scientific Publications	
# of technical reports	3 Technical Reports								
2) Improved Construction Tender Price Index in Namibia - Research into Factors Affecting Namibian Construction Tender Price Changes in the Period of 2000-2014					UNAM	Annual	0		110 000

Programme / Initiatives	INPUT Total budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
12(h) Research into smart materials	N\$ 450 000	1) Research into Nano-materials and composite materials for the use in the medical applications	# of conference/seminar presentations	Annual Research Report; Annual Reports	UNAM	Annual	0	2 Conference/Seminar Presentations	450 000
			# of construction Cost Software (Renewable Licence Annually)					1 Construction Cost Software (Renewable Licence Annually)	
			# of reports on research exchange, consultation and collaboration					1 Report on research exchange, consultation and collaboration	
			# of reports on Data Collection and Industry Collaboration					1 Report on data collection and industry collaboration	
			% of work completed for SME Training workshop					100% SME Training workshop completed	
			# of research reports					3 Annual research report	
# of research publications	2 Research Publication								
% of work completed of MSc students	100% MSc students completed								
% of work completed of PhD students	50% PhD student completed								



PRIORITY RESEARCH AREA 13: INFORMATION AND COMMUNICATION TECHNOLOGY

SPECIFIC OBJECTIVES:

Maintain and enhance the quality and sustainability of the environment and to integrate environmental concerns in all developmental policies and improve the tourism industry for better service delivery technologies

DESIRED OUTCOME:

By 2017, Namibia's environment and tourism sector is the most competitive in the Africa as results of research and innovation solutions

Table 20: SPRIORITY RESEARCH AREA 13: INFORMATION AND COMMUNICATION TECHNOLOGY

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
13(a) Promote applied research and capacity development on the socio-economic impact (and assess capacity) of information technology use	N\$ 11 924 000	1) Research and development on National Broadband policy	# of research reports # of national broadband policy	Research Report Final Policy	MICT	Annual	Research done prior to 2014	3 Research reports 1 National Broadband policy	50 000
		2) Law research and review of National Communication Act	# of report on law researchs # of report on recommendations for review of the National Communications Act	Annual Reports GRN Gazette	MICT	Annual	0	1 Report on law research 1 Report on recommendations for review of the National Communications Act	600 000
		3) Research to improve technological readiness of the Global competitive index	# of global competitive indexes increase	Global Competitive Index	MICT	Annual	3.3 Global competitive index of 3.3 out of 7	0.7 Global competitive index increase (3.3 to 4 out of 7)	10 624 000
		4) Capacity assessment and development on usage of existing ICT infrastructure in schools	# of capacity assessment report on usage of ICT Infrastructure in Schools # of schools provided with training on usage of existing ICT Infrastructure	Capacity Assessment and Capacity Development Reports at the Regional Education Councils	UNAM	Annual	0	1 Capacity Assessment Report on usage of ICT Infrastructure in Schools 15 Schools provided with training on usage of existing ICT Infrastructure	650 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
13(b) Promote applied research on and awareness of cyber security threats and develop globally-relevant strategies to secure ICTs resources and users of the country	N\$ 550 000	1) Development of security guidelines	# of security guidelines	Annual Reports	OPM	Annual	0	1 Security guideline	550 000
13(c) Promote applied research and develop application on Sectorial Information Systems	N\$ 16 050 000	1) Research on development of modern and reliable ICT infrastructure and services	# of Namibian global competitive index increased	Annual Reports	MICT	Annual	0	Improve Namibian Global Competitive index from 5.5 to 6	14 800 000
		2) Develop Information Systems Applications for the Education Sector	# of needs assessment report for School Management Information System	Needs Assessment Report and School Management Information System at the Regional Education Councils	UNAM	Annual	0	1 Needs Assessment Report for School Management Information System	15 350 000
			# of developed School Management Information System					1 Developed School Management Information System	
			# of schools introduced to the developed School Management Information System					15 Schools introduced to the developed School Management Information System in three regions	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
13(d) Promote green ICT practice focusing on E-waste	N\$ 1 602 000	<p>1) Investigate how interactive digital media and cultural systems and creative industry can mutually create new learning and educational value beyond their current perceived roles of entertainment</p> <p>2) To develop a model for the implementation of a mobile application that will assist farmers in leaf disease diagnosis and possible referral</p> <p>3) To develop national e-waste policy</p>	% work completed on information systems applications and products (a couple) for interactive multimedia systems for cultural and creative industries	Cultural Institutions; Surveys	NUST	Annual	0	100% Information systems applications and products (a couple) for interactive multimedia systems for cultural and creative industries completed	202 000
			# of prototype models completed	Conference; Journal Papers	NUST	Annual	0	1 Prototype model completed	400 000
			# of mobile application for assist farmers in leaf disease diagnosis and possible referral	A prototype Application				1 Mobile application for assist farmers in leaf disease diagnosis and possible referral	
			% of agricultural expert engaged	Annual Reports				70% Agricultural expert engaged	
			# of farm sites established					1 Farm site established	
			# of leaf diagnostic techniques					1 Leaf diagnostic technique	
			# of conference papers					1 Conference paper	
			# of journal papers					1 Journal paper	
			# of e-waste policies completed	Annual Reports	MICT	Annual	0	1 National e-waste policy developed	1 000 000



PRIORITY RESEARCH AREA 14: BIOTECHNOLOGY

SPECIFIC OBJECTIVES:

Promote the application of biotechnology to the field of agriculture, biomedicine, drug discovery and environment

DESIRED OUTCOME:

By 2017, Namibia has developed a biosafety strategy that informs future investment in research and innovation for sustainable development

Table 21: SPRIORITY RESEARCH AREA 14: BIOTECHNOLOGY

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
14(a) Promote scientific knowledge acquisition and development of technologies in the new and emerging sciences of biotechnology (focusing on water and food security), materials science, drug discovery, micro-electronics and laser technology	N\$ 1 792 500	1) UNAM research on biotechnology: Oshikundu formulation and starch functionality. Oshikundu aroma and sensory evaluation	# of scientific research articles	Annual Reports; Graduates Roll	UNAM	Annual	8 Research articles; 1 Technical report; 4 MSc, 17 BSc Hons Project students	3 Scientific research articles	1 792 500
			# of book chapters					1 Book chapter	
			# of BSc Hon. students					5 BSc Hon students	
			# of PhD students					100% Phd student completed	
		2) Proteases from Bacteria (local isolates), Laccases from Mushrooms	# of scientific articles	Annual Reports; Graduates Roll	UNAM	Annual	0	1 Scientific article	
								# of conference presentations	1 Conference presentation
								# of MSc students	1 MSc student
		3) Mycotoxin detection in stored Mahangu and Sorghum grains	# of BSc Hon students	Annual Reports; Graduates Roll	UNAM	Annual	0	1 BSc Hon. student	
								# of scientific articles	3 BSc Hon students
		4) 2,3 -butanediol production from local bacterial isolates for potential biofuel production	# of BSc Hon students	Annual Reports; Graduates Roll	UNAM	Annual	0	1 Scientific article	
# of conference presentations	1 BSc Hon student								
							1 Conference presentation		

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		5) Identification and characterisation of bilting micro biota	# of scientific articles # of conference presentations # of MSc students	Annual Reports; Graduates Roll	UNAM	Annual	0	1 Scientific article 1 Conference presentation 1 MSc student	
		6) The Development and Evaluation of A Lipid-Based Nanoparticulate Drug Delivery Sytem For Antiproliferative Extracts From Medicinal Plants	# of scientific research articles # of PhD students	Annual Reports; Graduates Roll	UNAM	Annual	0	2 Scientific research articles 1 PhD student	
		7) Isolation and identification of bioactive compounds from natural marine organisms	# of scientific articles # of conference presentations # of BSc Hon. students	Annual Reports; Graduates Roll	UNAM	Annual	0	1 Scientific article 1 Conference presentation 1 BSc Hon student	
		8) The Development and validation of high throughput screens for drug discovery from medicinal plants	# of technical reports # of research reports # of research articles or conference publications # of PhD graduates # of MSc graduates # of 4th Year B.Ed graduates	Annual Reports; Graduates Roll	UNAM	Annual	0	1 Technical report 1 Research Report 1 Research article or Conference Publication 1 PhD graduate 1 MSc graduate 1 4th Year B.Ed graduate	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
14(b) Promote ethical values in the use and application of biotechnology	N\$ 100 000	1) Draft National Biotechnology Strategy Developed; Biotechnology Committee being established through NAM-RSA bilateral;	# of peer-reviewed papers	National Biotechnology Strategy document	NCRST	Annual	0	1 Peer-reviewed paper 100% National Biotechnology Strategy developed	100 000



PRIORITY RESEARCH AREA 15: SPACE SCIENCE

SPECIFIC OBJECTIVES:

Promote the application of space science to the field of urban planning, agriculture and forestry, resource management, Navigation, national security and ICT

DESIRED OUTCOME:

By 2017, Namibia has developed capability to utilise space technology to find solutions in agriculture, water, fisheries

Table 22: SPRIORITY RESEARCH AREA 15: SPACE SCIENCE

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
15(a) Promote scientific knowledge acquisition and development of technologies in space sciences and build public awareness	N\$ 109 600 807	1) Post graduate Programme in Applied Science in Earth Observation, GIS and Remote Sensing (Task ID 303)	% work completed to establish new MSc degree	Annual Reports	NUST	Annual	0	100% New M.Sc. Degree established	5 690 806
			# of institutions participating in the SKA/AVN and HPC programme.	Bilateral agreements between NAM and RSA; Approved Namibian Proposal	NCRST	Annual	0	20 Institutions participating in the SKA/AVN and HPC programme	0
		% of students benefiting from SKA/AVN programme		To be informed by the National Strategy	NCRST	Annual	0	2 Science festivals	2 Science fairs to promote Space Science; Broaden awareness activities to include all other stakeholders
		3) Public awareness through Science fair and Science festival.	# of science festivals # of science fairs						
4) Academic program postgraduate diploma in Space and Atmospheric Science and postgraduate diploma in Space Technology			# of space science professionals # of science technologist	Annual Reports NUST graduates Rolls	NUST	Annual	0	10 Space science professionals 10 Space science technologists	3 465 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			# of space science labs # of science technology labs # of space science programmes # of science technology programmes % work completed for Computer labs in place	Annual Reports				2 Space science labs 2 Science technology labs 1 Space science programme 1 Science technology programme 100% Work completed for computer lab in place	
		5) Developing of the Masters program in Space Science Atmospheric Science and Space Technology	# of space science Masters program developed # of Atmospheric Science Masters program developed % work completed for Space Technology Masters program developed	Annual Report	NUST	Annual	0	1 Space Science Masters program developed 1 Atmospheric Science Masters program developed 100% Space Technology Masters program developed	11 970 000
		6) Public Awareness campaign by deploying a Mobile Planetarium	% work completed on awareness campaigns conducted	NUST Annual Report	NUST	Annual	0	100% Namibia public awareness campaign in Space Science and Space Technology completed	1 300 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		7) Research project : To establish a Nanosatellite Ground station for HCD and technology development	% work completed to establish nanosatellite ground station	NUST Annual Report	NUST	Annual	0	100% Work completed to establish a Nanosatellite High Frequency and S band frequency ground station for research projects	1 050 000
		8) Research Project: Establish Remote sensing centre for acquisition of CBERS data for research, HCD and technology development	# CBERS partners identified # MoUs in place # CBERS workshop HCD % of work completes for CBERS Lab	NUST Annual report	NUST	Annual	0	1 CBERS partner identified 1 MoUs in place 1 CBERS workshop HCD 100% Work completed for CBERS Lab	2 350 000
		9) Research project : Investigate the radio wave propagation of signals at HF and be part of the African universities consortium	% work completed in identifying the infrastructure and needs for study of HF propagation, acquisition of equipment for the HF research, HCD and technology development	Annual Report	NUST	Annual	0	100% Workshop for identifying the infrastructure and needs for study of HF propagation conducted and acquisition of equipment for the HF research, HCD and technology development	700 000
		10) Curriculum review to include Astrophysics	# of space science undergraduate programs developed	Annual Reports	UNAM	Annual	0	1 Space Science undergraduate program developed	115 000

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
			# of physics MSc program specializing in space science developed	Senate Minutes; NQA Approval			Existing MSc programme that includes some Space Science	1 Physics Masters program specializing in space science developed; Programme approved by Senate and NQA	
		11) UNAM - Physics Space Science MSc projects; HESS camera upgrade and HESS data analysis	# of MSc graduates # of annual research progress reports # of scientific publications % work completed for MSc part-time student	Annual Report; Progress Report; Graduates Roll	UNAM	Annual	0 1 BSc Hon report at UNAM 0 1 BSc Hon report at UCT	1 MSc students 2 Annual research progress report 2 Scientific publications 100% MSc part-time student completed	100 000
		12) Hold NamJEDI workshops for HCD	# of NamJEDI workshops held	Annual Reports	UNAM	Annual	0	2 NamJEDI workshops over 3 years	360 000
		13) Establish Research Chair in Multi-Wavelength Astronomy	# of research chair operational	Annual Reports	UNAM	Annual	0	1 Functional research chair with incumbent	3 080 000
		14) Increase number of PhD-level researchers in Astronomy at UNAM	# of PhD-level researchers at UNAM	Annual Reports	UNAM	Annual	2 PhD-level researchers in Space Science at UNAM	2 PhD-level researchers in Space Science at UNAM (excluding the above-mentioned chair)	0

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$	
15(b) Establish a National Space Council and develop a National Space Science Strategy	N\$ 500 000	15) OCTNam telescope upgrade	# of BSc Hon. thesis % of upgrade achieved	Annual Reports; Graduates Roll	UNAM	Annual	Optical 14" telescope at Cuno Hoffmeister Memorial Observatory	4 BSc Hon. students 100% Telescope upgraded and fully functional	1 400 000	
		16) Research with HESS	# of publications / presentations with Namibian input	Annual Report	UNAM	Annual	Running world-class telescope system	5 Publications / presentations with Namibian input several HESS	45 430 000	
		17) CTA site bid	% of site negotiations successful	Internal CTA Resource Board Reports	NCRST	Annual	Final site application document	100% Successful site negotiations	30 100 000	
		18) Public awareness activities	# of public lectures # of star gazing events	Annual Report	Namibia Scientific Society	Annual	Irregular public lectures and star gazing	3 Public lectures; activities ramped up to monthly public lectures	75 530 000	
		19) Water Vapour measurement on Mt. Gamsberg & GPS station for African Reference Frame	% of site testing campaign done	Annual Report	UNAM	Annual	0	100% Gamsberg site tested for mm-radio telescope	250 000	
		20) Radio Frequency Interference measurements for AVN site testing	% of site testing campaigns done	Annual Report	UNAM	Annual	0	100% First site tested	250 000	
		1) Establishment of the Namibian Space Science Council	% of the work completed on Space Science Council establishment and # of meetings	NCRST Annual Report	NCRST	Annual	0	100% Namibian Space Science Council established and implementation of work plan	250 000	

Programme / Initiatives	INPUT Total Budget Resources	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Frequency of reporting	Baseline 2013/2014	3 Year Target	3 Year Budget N\$
		2) Development, implementation and monitoring of the Namibian Space Science Strategy	% progress made on the development, implementation and monitoring of the Namibian Space Science Strategy	NCRST Annual Report	NCRST	Annual	100% Work completed on finalisation of the Namibian Space Science Strategy	0%	250 000



**MONITORING AND EVALUATION PLAN TEMPLATE:
YEAR 2015-2017**

Monitoring and Evaluation Plan template 1

Programme / Initiatives	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Baseline 2013/2014	Target		Budget N\$		Comment if not achieved
						Year 2 2015/16	Actual Achieved	Year 2 2015/16	Actual Achieved	
1(a) Support biomedical research in communicable and non-communicable diseases in the areas of prevention, diagnosis, therapy and management	1) WHO STEPs Survey on prevalence of Non-Communicable Diseases (NCDs) and its risk factors	% work completed on biomedical research on WHO STEPs Survey on Non-communicable Diseases completed	Quarterly, Annual and Project Reports	MOHSS	2004: 5 STEPs Survey on Non-Communicable Diseases (NCDs)	Data analysis, preliminary report writing, final report writing, dissemination of survey findings (50%)	Please indicate the degree of implementation on project or level of target achieved	5 000 000	Please indicate if the budget for Year 2 was spent partially spent	Please give a comment if budget was not spent or partially spent

Monitoring and Evaluation Plan template 2

Programme / Initiatives	Activities	Indicators	Data sources	Institution responsible for Implementation and reporting	Baseline 2013/2014	3 Year Target	Budget N\$		Comment if not achieved	
							Actual Achieved	Total budget for 3 year period		
I(a) Support biomedical research in communicable and non-communicable diseases in the areas of prevention, diagnosis, therapy and management	1) WHO STEPs Survey on prevalence of Non-Communicable Diseases (NCDs) and its risk factors	% work completed on biomedical research on WHO STEPs Survey on Non-communicable Diseases completed	Quarterly, Annual and Project Reports	MOHSS	2004: 5 STEPs Survey on Non-Communicable Diseases (NCDs)	Report on Biomedical research on WHO STEPs for Non-communicable Diseases	Please indicate achieved target for the 3 years	Please give a comment if target was not achieved	Please indicate the budget spent for 3 years	Please give a comment if budget was not spent or partially spent

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