APPENDIX M: SOCIAL STUDY

SOCIAL BASELINE STUDY

AND IMPACT ASSESSMENT FOR

LANGER HEINRICH URANIUM (PTY) LTD'S

PROPOSED EXPANSION PROJECT AT LANGER HEINRICH URANIUM MINE

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ABBREVIATIONS

CIA	Central Intelligence Agency
DEA	Directorate of Environmental Affairs
DRC	Democratically Resettled Community
EIA	Environmental Impact Assessment
EPZ	Export Processing Zone
ERC	Erongo Regional Council
GDP	Gross Domestic Product
GRN	Government of the Republic of Namibia
IUCN	International Union for Conservation of Nature
KRA	Key Results Area
LHU	Langer Heinrich Uranium (Pty) Limited
LHUM	Langer Heinrich Uranium Mine
MCA	Millennium Challenge Account
MDG	Millennium Development Goals
MET	Ministry of Environment and Tourism
MHSS	Ministry of Health and Social Services
MME	Ministry of Mines and Energy
MWT	The Ministry of Works and Transport
NamPol	Namibian Police
NNP	Namib Naukluft Park
NDP	National Development Plan
NPC	National Planning Commission
PDA	Progressive Development Area
RA	Roads Authority
SAIEA	Southern African Institute for Environmental Assessment
SSM	Small-scale mining
STC	Swakopmund Town Council
SIA	Social Impact Assessment
SMP	Social Management Plan
TB	Tuberculosis
WB	World Bank

1 INTRODUCTION

Langer Heinrich Uranium (Pty) Limited (LHU) has commissioned an Environmental Impact Assessment for the company's proposed Mine Expansion Project (hereinafter referred to as "the Project"). This is in preparation for an application to the Ministry of Mines and Energy for a mining licence to proceed with the activities associated with the Project.

A component of the EIA is a socio-economic baseline and impact assessment of the social environment of the Langer Heinrich Uranium Mine (LHUM). The Equator Principles, according to which this EIA is being conducted, require an assessment of baseline environmental and social conditions which constitute the receiving environment for the potential impacts of the proposed mine expansion.

2 SOCIO-ECONOMIC BASELINE STUDY

2.1 The context

2.1.1 The geographical context

Langer Heinrich Uranium Mine is situated on the eastern extreme of the Namib section of the Namib Naukluft Park (NNP). The Namib section is 14,322 sq. kms in extent. Namibia's only deep-water port, Walvis Bay, lies 80km to the west, and Swakopmund, the major tourist centre for the Erongo Region, lies 85 km to the north-west. The capital city, Windhoek, is about 450 km distant. The mine is accessed via the C28 and a 30 km private access road. From Walvis Bay, the C28 is accessed via the C34. There is an airstrip at the mine site.

The NNP is a designated Category 11 National Park. The definition of this category is "... large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible, spiritual, scientific, educational, recreational, and visitor opportunities" (IUCN 2009).

The Erongo Region hosts a number of uranium projects, both within the Namib Park and outside its borders shows the location of Langer Heinrich Uranium mine in relation to other major mining activities, as well as to Swakopmund, Walvis Bay and the desalination plant at Wlotzkasbaken.

Some of Namibia's most-visited scenic places lie within the Namib Park. These include the Moonscape and the Welwitchia Plains. Bloedkopje is a particularly popular overnight camping site for local and international visitors (Berry, 2009. Pers Comm, Davis, 2009. Pers Comm).There are also a number of private farms along the Swakop River. The C28 is a favoured and important tourist link between Swakopmund and Sossusvlei. The granting of a large tourist concession, including the erection of a lodge, to the Gobabeb Institute, will increase this importance.

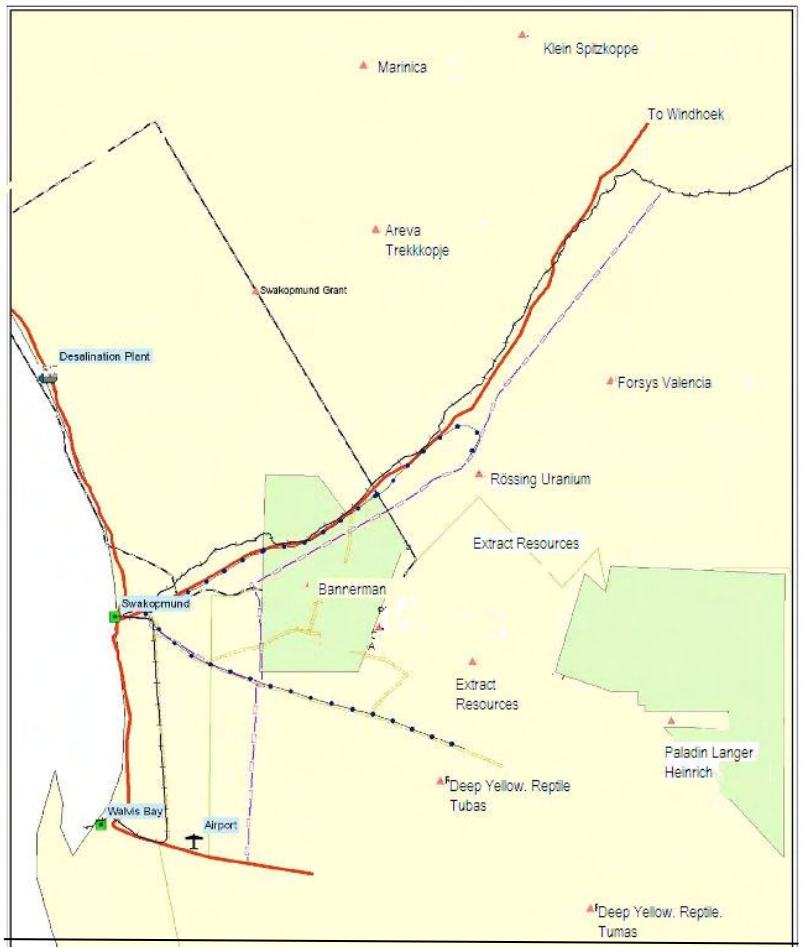

Figure 1: Langer Heinrich Uranium Mine in relation to major points of interest.

2.2 The institutional context – developmental legislation and policy

2.2.1 The Namibian Constitution

The Namibian government has adopted policies that promote sustainable development. Most of these originate in clauses of the Namibian Constitution. In Article 95(l), the State undertakes to "actively promote and maintain the welfare of the people by adopting…policies aimed at…the utilisation of natural resources on a sustainable basis for the benefit of all Namibians, both present and future…" Article 98 (1) provides assurance that "The economic order of Namibia shall be based on the principles of a mixed economy with the objective of securing economic growth, prosperity and a life of human dignity for all Namibians." (GRN, 1998)

2.2.2 Vision 2030

The 2030 Vision for Namibia is stated as *"A prosperous and industrialised Namibia, developed by her human resources, enjoying peace, harmony and political stability*".

Vision 2030 was launched in 2004 in response to a call for a vision that would take Namibia into the future. Vision 2030 is aligned with Namibia's international commitments, such as the Millennium Development Goals (MDG), and its achievement requires a shift from sector development to integrated approaches and strategic partnerships. Major concepts in Vision 2030 include:

- People's Quality of Life – this includes issues pertaining to equality and social welfare, human resource development and institutional capacity building, and population, health and development.

- Sustaining the Resource Base – this is organized around production systems and natural resources and also touches on aspects of equality and social welfare (GRN, 2005).

The goal of Vision 2030 is to improve the quality of life of all Namibians to the same level as that of their counterparts in developed countries. The goal provides a clear framework for development and places short-term planning within a long-term perspective. Its aim is to provide guidance to all three tiers of government and all sectors of Namibian society so that policy alignment is achieved (GRN, 2004).

Vision 2030 – progress

The following indicate the Namibian government's determination to alleviate poverty and its effects, and so bring about a more equitable society:

- The proportion of Gross Domestic Product (GDP) spent on education places it among the top ten countries in the world.
- It spends the second-largest amount per capita on healthcare on the African continent.
- Access to safe water and sanitation has been improved.
- It is one of very few countries in sub-Saharan African that provides a social safety net for disadvantaged groups such as the elderly and orphans and vulnerable children.
- The Social Security Act provides for maternity and sick leave and medical benefits.(WB 2007)

Poverty, extreme in some cases, social exclusion and unemployment are still widespread, and in 2006 an estimated 34.9% of the population lived on $1 per day and 55.8% on $2 per day (CIA 2008). Poverty is aggravated by high unemployment, with an estimated 34% of the labour force unemployed in 2007. Unemployment is particularly prevalent amongst those with little or no skills. The extremely skewed distribution of wealth is reflected in the Gini coefficient for Namibia. At 0.6[1] it is one of the highest in the world (WB 2007).

Poverty and inequality in Namibia are partly due to the difference in the rates of urban and rural growth. 60% of households and 65% of the population are found in the rural areas, but these account for only 38% of total income (WB 2006). Livelihood activities in the rural areas are largely based on subsistence agriculture, and a lack of other and more viable economic opportunities is a major cause of the urbanisation of the population.

Rural populations are disadvantaged in terms of income, employment, education and health-care. In 2009 85% of consumption-poor households were found in rural areas. Most people in rural areas live in sub-standard housing, without water and sanitation facilities. They lack access to potable water, electricity and good transport infrastructure (GRN 2004).

2.3 National Development Frameworks

The National Planning Commission (NPC) is situated within the Office of the President. The NPC is tasked with planning national developmental priorities and directing the course of national development. In this role, it keeps track of development in Namibia through the periodic national population census, household income and expenditure surveys and the collection and organisation of statistics and other data required for planning, both social and economic.

2.3.1 National Development Plans

Vision 2030 envisages National Development Plans (NDP) as the medium-term goals and the main vehicles for achieving the objectives of the long-term Vision in a succession of 5-year plans. Eight identified objectives deal with the broad spectrum of characteristics of an equitable, sustainable and

[1] The Gini coefficient is a widely used measure of income distribution, which can fluctuate from 0 to 1, with 0 being a completely equal distribution of income. A Gini coefficient above 0.55 is considered very unequal.

developed society. These eight objectives form the basis for the NDP3 strategies, where they have been converted into Key Results Areas (KRA) and NDP3 objectives.

NDP3 (2007/2008-2011/1012) is stated to be " the first systematic attempt to translate the Vision 2030 objectives into concrete policies and actions...and the first medium-term strategic implementing tool towards systematic Vision achievement".

The vision statement for NDP2 was "Sustainable and equitable improvement in the quality of life of all the people in Namibia." The review of NDP2 included in NDP3 indicates that the Plan did not achieve its objectives in a number of critical areas. In particular, the unemployment rate increased, in spite of the GDP growth rate of 4.7%. Economic growth did not translate into employment, and the rural areas showed the biggest increase in unemployment, signifying the continuing, possibly intensifying, disparities in rural/urban development.

The vision statement for NDP3 is "Accelerated Economic Growth and Deepening Rural Development". NDP3 is very ambitious, and it is different from previous development plans in that it has quantifiable targets for each goal. Economic growth for the period of NDP3 is projected to range between 5 and 6,5% per annum, despite the difficult global economic situation. This growth will be fuelled by agriculture, fisheries, mining, manufacturing, construction, transport and service sectors and tourism.

Cross-cutting issues that are implicit in nearly all the KRA's are employment creation, training, poverty alleviation and equity of income and access to opportunities. Possibly the most prevalent one is employment creation. The NPC hopes to raise the proportion of the labour force employed from 63.3% in 2004 to 66.7% by 2012. A number of activities and programmes address this issue, including training, support for SME's, focus on youth employment and upper-secondary and tertiary education.

The contribution projected for the minerals sector is significant, and is shown in Table 1.

Table 1: Targets for the Minerals Sector in NDP3 (GRN 2008).

Indicators	Baselines	Targets
Amend and promulgate Minerals Act **Complete Mining Charter**	Draft Document	Minerals Act enacted by end 2008 Mining charter completed by end 2009
Contribution of minerals to GDP	10.4%	11%
No. of SMEs with Namibian ownership in mining sub-sector		2 by 2012
Share of Namibian equity/BEE in mining	No data available	BEE at15% by 2011
Employment in Mining	2% in 2004	2.1% by 2012.
Women's employment in mining	No data available	Increase by 2% by 2012
Investment in mineral exploration	N$ 477 million in 2005	N$ 572 million by 2012
Percentage comprehensive airborne geophysical coverage of Namibia magnetic radiometrics. **Percentage regional geochemical sampling survey coverage** **Percentage electro-magnetics (EM) Coverage**	80% coverage Five 1:250000 Map sheets sampled EM Surveys in the Omaheke region in areas covered by recent Kalahari sediments	100% coverage by 2010 Complete one 1:250000 map sheet per year Target areas surveyed on annual basis 5000 Line kms per annum.
Number of SSM provided with basic training in geotechnical, mining, mineral processing and marketing services.	6 trained	20 SSM trained per regional association per annum
Loans to support SSM from the Minerals Development Fund or private financial institutions.	N$ 23.6 million (2007)	N$ 28.3 million by 2012
No of SSM marketing centres	0 (2007)	3 (2012)
Desalination facilities	O (2007)	1

Under the KRA, *Productive Utilisation of Natural Resources and Environmental Sustainability*, the following strategies, programmes and activities are specifically stated as relevant to the minerals sector:

- promoting the development of new mines through the provision of comprehensive geological information on mineral resources;
- promoting downstream processing and value addition activities;
- encouraging Namibian entrepreneurs in the mining sub-sector and mineral processing;
- supporting small-scale mining and small and medium enterprises;
- developing regional marketing centres for small-scale miners' products;
- providing an enabling legal and regulatory environment and the enforcement of the Mineral Act and Health and Safety Regulations;
- strengthening of Namibia's capacity in mining and mineral processing. The sub-sector programme will involve increased support to improved mining output by large, medium and small-scale miners.

Provision is also made for improved technologies and participation of communities and stakeholders in minerals exploitation.

2.3.2 The Millennium Declaration and Millennium Development Goals

The MDGs set out the key challenges facing humanity, outline a response to these challenges and establish indicators for assessing progress in achieving them by 2015[2]. The MDG is one of the seminal documents informing NDP3. Progress towards achieving the MDGs is integrated into the

[2] http://www.developmentgoals.org accessed March 2009

national development framework, and many of the successes and failures of NDP2 mirror progress in achieving MDGs.

The UNDP reviewed Namibia's progress in achieving the MDGs in 2004 and again in 2007. While it gives an overall rating of good, problem remain, notably school drop-outs and low Grade 5 survivals, HIV/AIDS (regarded as worsening), basic sanitation in rural households and child mortality.

There are indications that Namibia has not managed to make serious progress in addressing under-development and unemployment. The unemployment rate increased during the period of NDP2, and child, infant and maternal mortality rates have increased. Average life expectancy is 49 years[3].

3 MAJOR ROLE PLAYERS IN THE ERONGO DEVELOPMENT TRAJECTORY

3.1 CENTRAL GOVERNMENT DEPARTMENTS

3.1.1 Ministry of Health and Social Services (MHSS)

The mission of the Ministry is to "eliminate the main causes of physical ill-health and mental and social ailments in order to give the Namibian people the opportunity to lead a normal fulfilling life" (MHSS, 2001). Its objectives are to:

- eliminate vaccine-preventable diseases (tuberculosis, measles, diphtheria, pertussis, polio and tetanus),
- eliminate air, water and vector-borne diseases and to do this by aspiring to the highest level of environmental sanitation, community and personal hygiene,
- eliminate sexually transmitted diseases, HIV infection, and alcohol and substance abuse and to achieve this by attaining the highest level of good behavioural practices,
- make necessary facilities and resources for prevention, early recognition and correct management of physical and mental illnesses available, and
- promote and protect the physical, mental and emotional wellbeing of mother and child.

3.1.2 The Ministry of Works and Transport (MWT)

The MWT is tasked with ensuring the availability and quality of transport infrastructure and specialised services. The Roads Authority (RA) was established under MWT's purview in 1999 to manage the national road network. One of the objectives was to achieve a safe and efficient road sector, which would promote and support economic growth. The RA has the duty to plan, design, construct and maintain the national road network and to ensure that work contracted out is performed according to set specifications and standards. It is also responsible for the operation of a road management system and the prevention of excessive damage to roads by enforcing legislation in place for this purpose (MCA 2009).

The RA employs the best possible technical standards in the construction and maintenance of road infrastructure. This is one of the reasons why Namibia is placed amongst the best in road network development and management on the African continent (MCA 2009).

In order to minimize damage to the country's road network, the RA, in cooperation with other law enforcement agencies, administers policies against ill-practices such as vehicle overloading. Weighbridges are positioned at strategic points across the country (MCA 2009). Of relevance to this Report are the weighbridges at Brakwater, which monitors trucks coming from Windhoek to the coast, and the one at Walvis Bay, which monitors trucks going to Swakopmund and inland. According to the

[3] Life expectancy was 62 years in 1990

RA, it is possible that 30% of heavy-duty trucks by-pass this weighbridge, especially over week-ends (Amadhila 2009, Pers. Comm).

3.1.3 The Ministry of Environment and Tourism (MET)

The mission of the MET is to:

- maintain and rehabilitate essential ecological processes and life-support systems,
- conserve biological diversity, and
- ensure that the utilization of natural resources is sustainable for the benefit of all Namibians, both present and future, as well as the international community, as provided for in the Constitution.

The MET is mandated to achieve this vision through a number of objectives, which include to:

- apply appropriate environmental, social and economic assessment procedures to development proposals, plans and projects, and
- develop, coordinate and promote tourism on a sustainable basis, both within proclaimed conservation areas and in the country as a whole, in partnership with other organizations.

Two of the Ministry's five directorates are particularly relevant to this Report:

- The Directorate of Environmental Affairs (DEA) has formulated a Mission Statement which commits it to promote environmental protection, environmental planning and environmental coordination to support the sustainable and equitable use of natural resources and national development, and to protect the environment and human welfare from unsustainable, unhealthy and inappropriate practices.

  The DEA runs an extensive Environmental Legislation Programme, which has resulted in a series of law-proposals, and a notable outcome has been the Environmental Management Act (Act No 7 of 2007).

- The Directorate of Parks and Wildlife Management is committed to maintain the infrastructure in parks and recreation areas at a standard that will ensure maximum benefit for tourists, to promote the conservation of natural resources and wildlife habitat in Namibia and the sustainable use of wildlife resources.

3.1.4 Ministry of Labour and Social Welfare (MLSW)

The Ministry is responsible for the execution of the Labour Act No. 11 of 2007, the Social Security Act, Act no. 34 of 1994, the Employees Compensation Amendment Act no. 5 of 1995 and The Affirmative Action Act, (Employment) Act no. 29 of 1998. The various Acts stipulate, amongst others, sound labour relations, fair employment practices, employment equity, training, minimum basic conditions of service, workplace health and safety and retrenchment. Compliance is enforced and monitored by the Ministry of Labour through the office of the Labour Commissioner.

3.2 The Erongo Regional Council (ERC)

The Regional Councils Act of 1992, the Decentralisation Policy of 1996 and the Decentralisation Enabling Act provide a legislative framework for progressive decentralisation, i.e. the transfer of comprehensive management and planning authority from central government to regional and local authorities. A Regional Council has the responsibility "to undertake … the planning of the development of the region for which it has been established" (SAIEA, 2007).

Although the Regional Councils are mandated by legislation that states that they must plan the development of their regions, they are constrained by the limited meaningful power they have gained

and by the slow progress in decentralisation, which is addressed as a critical issue for accelerated development in NDP3.

The ERC's social and community portfolio covers an extensive range of developmental activities. In the context of poverty reduction and economic development, the ERC views sound management of natural resources, such as minerals, as essential. The ERC has a number of focus areas for development. These include water resources, the environment, tourism and fishing and marine resources. Regional Development Plans are aligned with NDPs and, ultimately, with Vision 2030. At the time of this Study the Regional Development Plan for the period covered by NDP3 was not available. However, as discussed previously, NDP3 stresses the need for an increased contribution to development by the minerals sector, and this aspect can be expected to be emphasised in the ERC Development Plan as well.

Developments which could impact on the entire region, such as inward migration of work seekers, have a major impact on towns, and the ERC can only assist local authorities with advice (Garoeb, 2008, Pers. Com.). The ERC's primary development focus is on the rural areas, which are its direct responsibility.

3.3 Socio-Economic Environment

3.3.1 Social environment

Erongo is Namibia's sixth largest region, extending over 63,720 km^2. The population in 2007 was estimated at 111,346 (GPT, 2008) with a yearly growth rate of 1.3%. The region is sparsely populated, and its inhabitants are widely dispersed, resulting in a very low population density.

80% of the region's population lives in urban settlements (ERC, 2007), principally Swakopmund and Walvis Bay, where most of the urban growth has occurred. Erongo Region is regarded as traditional land by many Damara people, but ethnic diversity is encouraged by the perceived potential for job opportunities in the mining and fishing industries. This pull factor has resulted in a significant number of people of diverse ethnic groups migrating to the region, some to remain.

Erongo is considered to have some of the best schools in Namibia. There are 45 state schools in the region, and 13 private schools. Adult literacy rates are high compared to the national average: 92% of 15+ years are literate. In general more female than male children attend school. In all constituencies, except Daures, females are more literate than males. A significant proportion (19%) of women in rural areas lacks the ability to write and read (ERC, 2007). Remote rural areas display lower literacy rates than urban areas.

Health services in the region are relatively good. The construction of new health facilities has brought health services closer to the communities. There are state hospitals in Omaruru, Usakos, Swakopmund and Walvis Bay. Swakopmund and Walvis Bay have a private hospital each, and clinics serve both the urban and rural population. However, clinic services are not adequate; it is difficult to attract staff to rural areas, and the renovation of existing facilities has been very slow (Ninham Shand, 2008).

Table 2 compares fertility and mortality rates in Erongo with national rates, and shows that life expectancy in Erongo is higher than the national average, while infant and under-five mortality rates are lower.

Table 2: Fertility and mortality rates in Erongo compared to Namibia (Source, ERC, 2007)

		Erongo	**Namibia**
Average number of children per woman[2]		5.1	**4.1**
Infant deaths per 1000 live births:	Female	43	**49**
	Male	40	**55**
Child (<5 years) mortality rate	Female	57	**64**
	Male	49	**78**
Life expectancy at birth (years):	Female	59	**50**
	Male	54	**48**

Table 3 shows Erongo's ranking on the Human Poverty Index (HPI) for Namibia, and Table 4 shows the region's ranking on the Human Development Index (HDI).[4] The population of Erongo, after Khomas, has the second-highest state of development and the second lowest rate of human poverty. However, with regard to unemployment, it ranks with those regions that have the highest unemployment rate – over 36%.

Table 3: Human Poverty Index for Namibia (Source: UNDP, 2007)

HUMAN POVERTY INDEX (%)		
	2001-2004	1991-1994
Namibia	33	29
Urban	23	14
Rural	42	36
Caprivi	43	38
Erongo	18	20
Hardap	30	20
Karas	21	20
Kavango	45	52
Khomas	19	9
Kunene	38	39
Ohangwena	42	31
Omabeke	34	43
Omusati	45	29
Oshana	37	33
Oshikoto	45	27
Otjozondjupa	23	35
Male	33	28
Female	34	31

Table 4: Human Development Index for Namibia (Source: UNDP, 2007)

HUMAN DEVELOPMENT INDEX		
	2001-2004	1991-1994
Namibia	0.557	0.607
Urban	0.661	0.719
Rural	0.473	0.530
Caprivi	0.421	0.441
Erongo	0.705	0.690
Hardap	0.572	0.637
Karas	0.664	0.666
Kavango	0.410	0.480
Khomas	0.732	0.784
Kunene	0.504	0.509
Ohangwena	0.403	0.524
Omaheke	0.627	0.528
Omusati	0.476	0.595
Oshana	0.548	0.602
Oshikoto	0.490	0.656
Otozondjupa	0.638	0.567
Male	0.556	0.609
Female	0.545	0.580

Health and health-associated social ills vary throughout the region, largely determined by the urban or rural setting. HIV/AIDS, unemployment and substance abuse, particularly of alcohol, are found throughout the region. TB is mainly related to the coastal towns but also occurs in the rural areas. A

[4] The HDI and HPI concentrate on three essential dimensions of human life; longevity, knowledge, and a decent standard of living. The HDI seeks to provide a measure for the capabilities of individuals, the HPI focuses on the deprivation in the same three dimensions. For a further discussion of these two indices, see http://www.sarpn.org.za/documents/d0002886/index.php

lack of housing results in overcrowding, which impacts on urban dwellers, while a lack of community development programmes is a problem in rural areas. Commercial sex is not a regional or rural concern, but is mainly related to the coastal towns, in particular to the harbour town of Walvis Bay.

HIV/AIDS is a serious problem for the region's development. The regional prevalence rate of 27% is the highest in the country (The Namibian, 2006). The region also has the highest TB rate in the country at 1,380 per 100,000 population (Shiteta, 2008, Pers. Comm.)The poor housing conditions under which people in backyard shacks and informal settlements live contribute to deterioration in living standards and the spread of TB and HIV/AIDS.

3.3.2 Economic environment

After Khomas Region, Erongo Region has the second highest income per capita in the country. This relative prosperity is based on fishing, mining and tourism. The region is highly dependent on its natural resources, both non-renewable, such as minerals, and renewable such as fish, biomass, water and soils.

Like the rest of Namibia, access to economic opportunities and resources in Erongo is highly skewed. Some rural communities, such as the Topnaars, are isolated, marginalized and under-developed, and they have little access to the mainstream economy or to alternative livelihood opportunities. The uneven spread of development, benefits and economic opportunities is reflected in the regional Gini co-efficient of 0.60. 19.7% of the population is regarded as poor, i.e. more than 60% of household expenditure is on food. 7.1% of the regional population is extremely poor, i.e. more than 80% of household expenditure is on food (ERC, 2007).

68% of all employed persons are employed in the private sector, where the number of males is almost double that of females. The state sector employs about 16% of all employees in the region, and men dominate this employment sector as well (ERC, 2007).

Erongo's major urban centres, Swakopmund and Walvis Bay, comprise more than 50% of the region's economic base, and they contribute more than 25% to national GDP.

Table 5 shows the main sources of income in Erongo, and reveals a high dependency on wages and salaries compared to the national rate of 41.4%. This makes the workforce vulnerable to downscaling, retrenchment and closure of projects.

Table 5: Main sources of income in Erongo. (Source: ERC, 2007)

farming	3.9
business (non-farming)	7.9
wages and salaries	66.6
pension	9.6
cash remittance	8.0
other	2.8

Industrial activity is limited and based on fish processing, concentrated in Walvis Bay. Constraints on industrial development are the lack of a sufficient supply of water and a sufficiently large local market (GPT, 2008).

SME activity is also limited and is concentrated mainly in trade and services and, to a lesser extent, in manufacturing (which includes beer/liquor brewing). Inputs for the manufacturing industry cannot be sourced locally and it is usually not possible to have machinery and equipment repaired locally. Growth potential in the SME sector in Erongo is closely linked to growth in the manufacturing and transport sectors and to the fishing, tourism, and mining sectors.

Significant agricultural activity is not possible, due to the aridity of the soil and a lack of water.

3.3.3 Major land-use activities

- Conservation

Much of the Namib Desert falls within conservation areas, and National Parks account for almost a third of the land use within the Erongo Region. These areas include The Namib section of the Namib Naukluft Park and the National West Coast Tourist Recreational Area. Currently there is one mine operational within the Namib Park, and a number of EPLs have been granted. Activities in terms of these have commenced.

- Agriculture

Areas of the Central Namib Desert which have not been proclaimed as conservation areas usually have no surface water and little or no underground water available. Consequently, they are generally of very low agricultural potential and cannot support formal farming activities. Two types of farmers are active in the Erongo Region: communal farmers and commercial farmers. Communal farmers are involved in small-scale production for own consumption or for sale at the local, often informal, markets.

The following aspects of commercial farming could be found in the Erongo area:

- livestock, i.e. both small and large stock,
- wildlife,
- tourism/lodges and game farms/guest farms, and
- irrigation, i.e. vegetables, grapes and citrus.

Farms located on the lower portion of the escarpment/desert transition are considered totally unsuited to any farming practice. Nearer the coast, formal farming is undertaken on several small holdings in the lower Swakop River. Dairy and vegetables are produced here for the local market. Towards the interior portion of the Central Namib Desert, informal farming was conducted along the courses of most of the rivers and still continues along the rivers to the north of the Swakop River. Several groups of Topnaar raise goats, cattle and donkeys along the lower reaches of the Kuiseb River.

- Mining

Mining activities account for a significant portion of land-use in the Erongo Region. According to the Ministry of Mines and Energy, as at 1 September 2006, approximately 114 licences and/or Exclusive Prospecting Licences were registered or pending with the Ministry, though most of these have not yet been activated. The main commodities mined are uranium and gold. Extensive salt mining also occurs along the coast at Walvis Bay. Prior to the start of mining operations at Rössing Uranium, several small- to medium-scale prospecting and mining operations were located in the Central Namib region, focusing mainly on copper, tin and semi-precious stones.

Small-scale mining (SSM) is an important economic activity in the region. A total of 521 claims were registered or pending with the Ministry of Mines and Energy as at 1 September 2006. The main commodities are semi-precious stones, dimension stone and tantalite-cassiterite.

3.3.4 Economic drivers

The minerals sector

Mining activities account for a significant portion of land-use in the Erongo Region. Significant mining activities in the region are Rössing Uranium, the Navachab gold mine, Langer Heinrich Uranium, AREVA and the coastal salt operations.

SSM is an important economic activity in the region. Most of the small-scale miners operate at a subsistence level, but the sector is important for providing employment and livelihoods. The Rössing

Foundation, which works extensively with the SSM sector, currently has 2843 small-scale miners on its database (Ondigo 2008, Pers Comm).

There are a number of dimension stone operations and quarries in Erongo, some of them within conservancies and the NNP.

Benefits accruing to local communities from mining operations are substantial. Contributions to local and regional economies include procurement of goods and services, and remittances sent back to the areas of origin of employees. These remittances play a significant role in sustaining families and livelihoods in those regions.

The minerals sector also contributes substantially to further education by means of bursaries, of which in excess of 350 new ones were granted in 2006-2007. Virtually all major operations are devoting significant levels of resources – some around 5% of their labour costs – to education and skills training, both of their own employees and also of the wider community (CoM, 2007).

Tourism

Tourism is Namibia's 3rd largest foreign exchange earner and is one of the fastest growing industries in Namibia. In Erongo, tourism resources are exploited by only a small section of the business community. This limits the benefits the sector could offer to community development in the region. Erongo has extensive and varied tourism potential and could offer a wider range of experiences to visitors by co-operation and skills development in all the groups active, or with the potential to be active, in the sector.

National parks and protected and conservation areas account for 35.8% of land-use in Erongo Region. These areas include the Namib section of the NNP (14,322 Sq. Kms), the National West Coast Tourist Recreation Area (7,382 sq. Kms), Cape Cross Seal Reserve (22 sq kms) and Walvis Bay Nature Reserve and Dunes (WBNR) (1,080 sq. Kms).

Protected areas account for about 70% of holiday expenditure in Namibia (WTTC, 2006).

Continued profit from these areas depends on their conservation and the enhancement of the natural environment from generation to generation. Employment creation can be significant. In Erongo, there is public concern about the increasing industrial activity, particularly mining, with its attendant infrastructure, that is taking place in conservancies and in the NNP. Namibia's particular attractions for tourism lie in the abundance of wildlife, the unique ecosystems and the desert sense of place. People come for the vast spaces, the isolation, and the quiet. These characteristics are rapidly sustaining severe negative impacts.

The World Travel and Tourism Council (WTTC) produces annual reports which assess the tourism sector's current and likely future contribution to national economic activity, employment and GDP. It's 2009 report on Namibia (WTTC, 2009) provides the following statistics:

- the sector's contribution to GDP is expected to rise from 13.9% (N$ 8,560.9 m) in 2009 to 20.0%
  (N$ 29,048.2 m) by 2019;
- employment by the sector is expected to rise from 77,000 jobs in 2009, (17.8% of total employment, 1 in every 5.6) jobs to 130,000 jobs (23.2% of total employment, 1 in every 4.3 jobs) by 2019.
- real GDP growth for the sector expected to be 4.5% in 2009 and to average 7.9% per annum over the following 10 years.
- export earnings are expected to generate 15.2% of total exports (N$ 5,313.5 m) in 2009, growing, in nominal terms to N$ 20,471.9 m (22.1% of total exports) in 2019.

It was not possible to access a wide range of statistics relevant to Erongo, but the following is indicative of the popularity of the region. Figure 2 shows that, of the ten destinations most visited by international tourists, six are located in Erongo Region.

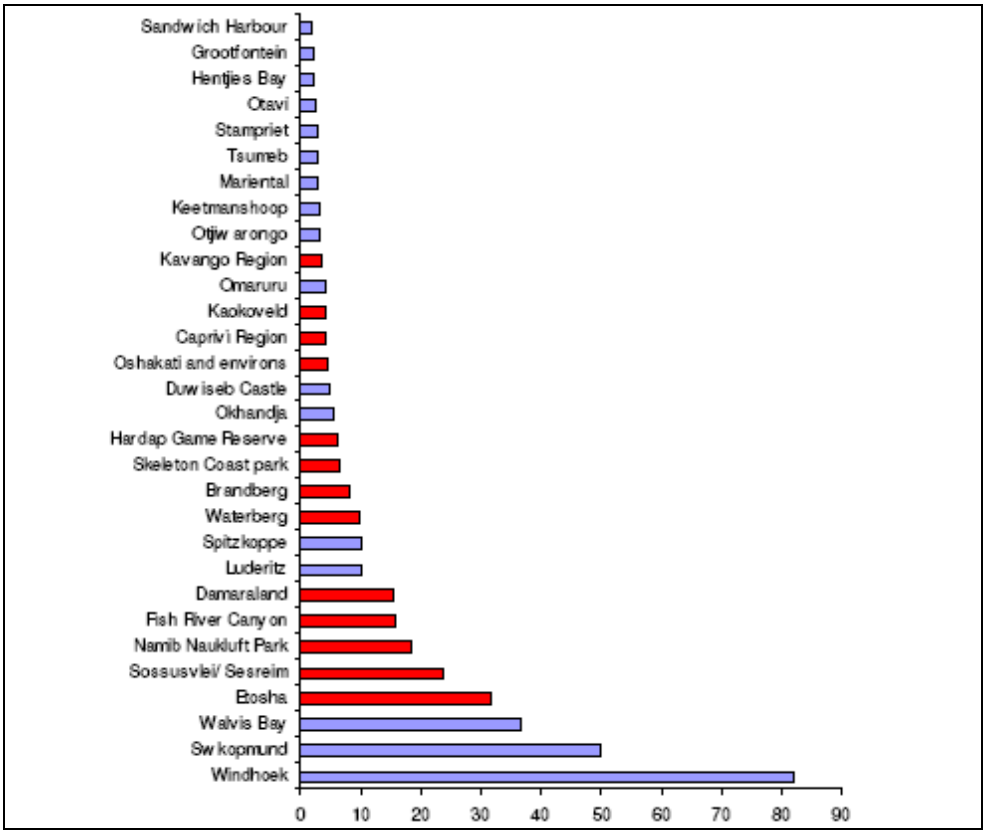

Figure 2: Percentage of visitors visiting various locations in Namibia. Red bars indicate designated protected areas and other nature areas (Turpie et al., 2005)

In 2007 Erongo recorded the second highest number of bednights sold , and in January – February 2008 the third-highest bed occupancy in the country. The region also has the highest amount of accommodation for tourists and registered the most new establishments between 2006 and 2007 (HAN, 2008)

It is not only foreign visitors that are attracted by unique natural environments in the country. Figure 3 shows that Namibians who travel within the country have a strong preference for nature-based travel.

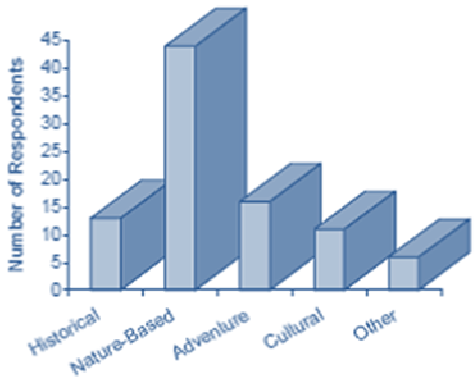

Figure 3: Kind of travel within Namibia favoured by Namibians. (Source: NTB, 2007)

3.4 Communities of interest

These communities have been identified on the basis of their service provision to Langer Heinrich (accommodation, transport, supplies, etc) and on the basis of shared resource-use.

3.4.1 Swakopmund

The town of Swakopmund is located on the coast, approximately 85 km from the Langer Heinrich Uranium Mine. It is a popular tourist centre, and the seat of the Erongo Regional Council.

The socio-economic profile of the town has undergone considerable changes during the last five years as a result of the burgeoning uranium activities in close vicinity to it.

Demographics

The population is estimated to be between 40 000 and 42 000, based on the 2006 polio vaccination programme. The number of people in the town doubles in the tourist season, and it is popular with both domestic and foreign tourists.

About 6,000 people currently live in the informal settlement, the Democratically Resettled Community (DRC). The largest part of the migratory workforce occupies temporary housing facilities in Mondesa. It is also from these informal housing locations that most of the reported cases of TB originate (Ninham Shand 2008).

Informants state that there has been an increase in the population. This opinion is based on the number of vagrants in the streets, the rising crime rate (usually associated with unemployment) and the increasing numbers of out-patients at the state health facilities.

The attraction of potential job opportunities which stimulates inward migration has led to an ethnically mixed town. The white population is relatively large and there is a significant presence of German-speaking residents, but the number of foreign nationals is increasing as mining companies bring in their own staff and expertise. The DRC has been described as a "melting pot", with people arriving from all the regions in Namibia, as well as from neighbouring SADC and other African countries.

Swakopmund has excellent medical facilities, and together with is situation on the coast, this makes it a favoured retirement town.

The unemployment rate is difficult to state because of the different ways in which unemployment is defined, and because of the mobility of a large sector of the population. It is estimated to be in the region of 40%. The unemployment rate in the DRC is estimated to exceed 55% (Ninham Shand 2008).

Only one-third of Erongo residents were born where they live. The rest have come to their place of residence from elsewhere. Compared with all 13 regions of Namibia, no other region has such a high rate of people living in an area where they were not born (NPC, 2000b).

Economy

The economic stability of the town is mainly based on the hospitality industry, mining and to a lesser extent small scale industries (Swakopmund, 2009). The mainstay of the economy has traditionally been the tourist sector, which is easily affected by crime and environmental factors. Swakopmund is well-positioned for visits to the eco-tourism sites which give the region its unique appeal, and numerous tour companies use the town as a base for trips to sites such as the NNP, the Skeleton Coast, Spitzkoppe and the Brandberg. The land-use conflict between these fragile eco-systems and mineral extraction is of concern to stakeholders. The issue of short-medium term benefits from mining versus sustainable benefits from the tourist industry is one which is addressed by the STC in its long-term strategic plan, which makes provision for strengthening the tourism base, the establishment of a heavy industrial zone and the encouragement of heavy industry and a diversified economy (Swakopmund, 2009).

Swakopmund has a large and diverse number of retail outlets, and business and light industry support services. The town is well-placed to respond to increased consumer demand and to benefit from the

additional cash flowing into the economy. However, there are also increasing demands for business and residential space, which is not freely available.

Social concerns

The socio-economic profile of the town is that of a dual economy, with wealth existing side-by-side with extreme poverty. This duality is reflected in the lack of integration between the more affluent suburbs and the cosmopolitan central business district on the one hand, and suburbs like Mondesa and the DRC on the other. Until recently, tourist maps did not reflect the poorer suburbs or the DRC.

Alcohol abuse is a serious problem. Contributory causes are poverty, unemployment and poor living conditions. Most cases of domestic violence are attributed to alcohol abuse. In Mondesa, there has been a public outcry against the number of shebeens operating. People are starting to query the ease with which shebeens get licensed, but this issue is a politically sensitive one.

The biggest challenge for the Council is the inflow of job-seekers who need accommodation, which is not readily available. Inward migration has resulted in a proliferation of backyard shacks, as well as increasing the average poverty and unemployment rates. Almost every second house in Mondesa has a shack in the backyard and the total number of backyard shacks is estimated at 4,000, with up to 12 shacks and a formal house on one stand. (Plaatjie Pers. Comm. 2009). The STC is trying to limit the number of shacks, as people are paying excessive rentals for unacceptable and congested living conditions, where access to services is inadequate. Safety is compromised and shacks frequently burn down. The economic impacts on people who are already poor, and the social impacts on formal residential areas, particularly in Mondesa, are high. However, landlords are earning an income from letting out space in their backyards, and this cannot be ignored. The STC is promoting the building of decent living quarters which will also improve the value of properties, but, the shack culture appears to be entrenched, and moving people away from it is difficult and politically sensitive.

The DRC is the only informal settlement in Swakopmund. It is situated north-east of Mondesa, at some distance from the town. There are approximately 1,370 plots. Housing and living standards are sub-standard compared to the rest of Swakopmund.

Municipal and social services

The general reaction to questions about the capacity of the Swakopmund Town Council (STC) to continue delivering sufficient and efficient services in the event of a significant inward migration was positive. However, some concerns were expressed, the most prominent being housing and accommodation, school capacity and the growth of informal settlements with the attendant social problems.

Housing

Housing is a major concern, and currently there is no serviced land available. The demand for property is great, but the STC cannot meet most of these demands due to the unavailability of land and the lengthy process for the proclamation of townships. The high demand for land, for investment, holiday homes, speculation and retirement_, has dramatically increased property values, which are amongst the highest in Namibia. Newcomers to the market will not only be faced by a shortage of accommodation and serviced erven, but also by prices which will be out of reach of the average worker (Ninham Shand, 2008). In recognition of this, the STC has adopted a policy of allowing certain auctions to be reserved for first-property owners (Swakopmund, 2006).

Business premises, too, are in short supply, and because demand exceeds supply, the rentals are high.

800 erven are being developed between Mondesa and the DRC. This area is termed a Progressive Development Area (PDA) and it is intended for low-cost housing that can be improved at a later stage. The erven are fully serviced with the exception of the provision of electricity, which still needs to be finalized. The STC wants people living in the DRC and in backyard shacks to move into this area.

Water

Swakopmund is supplied with drinking water from the Omdel aquifer. The Omdel Scheme is currently being utilised to the maximum as a result of an historical over-estimation of its capacity. Figure 4 shows that, in spite of the physical expansion of the town, water consumption in Swakopmund has remained relatively stable for the last three years, probably as a result of the staggered water tariff and the fact that the public is becoming more aware of the need to save water.

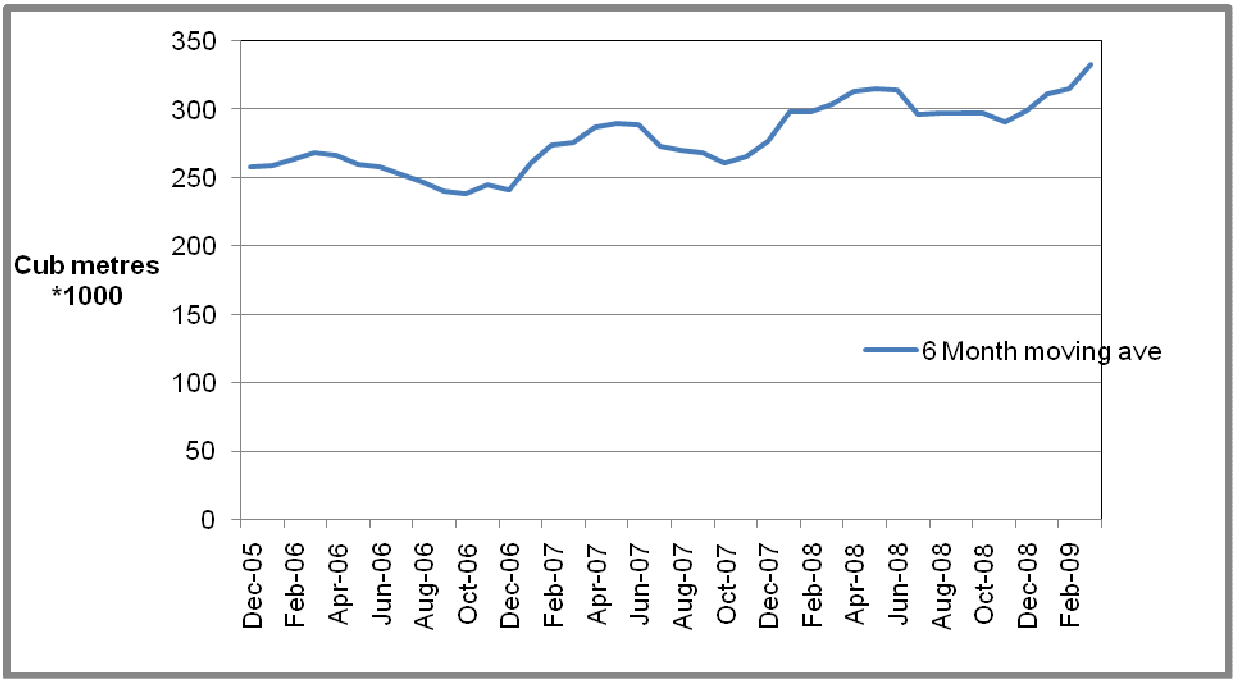

Figure 4: Water consumption in Swakopmund, December 2005-February 2009

A significant increase in the number of households and inward migration to informal settlements and backyard shacks could place demands on supply which will be difficult to meet. Consumption in the DRC increased from 6,678m³ in 2004/2005 to 8,978 m³ in 2005/2006 (STC 2006).

High water losses are experienced, and these are ascribed largely to illegal connections and ageing infrastructure. Proposed expenditure for the STC's 2009/2010 budget includes partial replacement of lines which are too old to meet the demands of the developing town (Swakopmund, 2009). Water losses will be monitored by remote-controlled zone water meters.

Waste

Swakopmund has experienced problems with its cleansing services as a result of the influx of people and the inadequacy of the existing current solid waste dump. To address these problems, the STC has introduced additional refuse removal trucks to maintain a good standard of service. This necessitates a restructuring of tariffs, which will increase during the 2009/2010 budget period.

The upgrading and maintenance of the refuse dump has been outsourced to Enviro-Fill Namibia, and adjusted disposal fees will be levied from 1 July 2009.

Law and Order

It was not possible to access crime statistics for Swakopmund, but there are indications that it is a matter of concern, particularly for a town whose economy is based on tourism. Visitors to the town are provided with pamphlets detailing measures they should take for their own safety, and these are also listed on the web site of the STC and various travel agencies. There are visible security

measures throughout the town. The STC has appealed to the business community to support anti-crime initiatives, including the Mayoral Anti-Crime Fund, which assists NAMPOL by maintaining their vehicles. A recent initiative, Crime-Stoppers, is a public-private partnership between NAMPOL, community members and volunteers, mostly young people. According to the spokesperson for the organisation, economic crimes are the most prevalent ones in the town, whereas most drug and alcohol related crimes occur in Mondesa (Swakopmund Crime Stoppers, 2009).

Most cases of domestic crime are attributed to alcohol abuse, whereas poverty is the cause of housebreaking and theft. A NAMPOL spokesperson, expressing concern about inward migration commented that: "Even if the public and the mining companies gave millions to train officers, crime would go up because of pressure of poverty. People need to live, and if they have no jobs they turn to crime." (Ninham Shand 2008).

Electricity

Swakopmund has no infrastructure problems with the supply of electricity to consumers, as this was part of the STC's master development plan. However, there is ongoing dissatisfaction with Erongo Red, which, the STC maintains, has resulted in duplication of services and an escalation of the cost of electricity. When the STC was the service provider, non-remunerative services were partially funded from surpluses generated from the supply of electricity, but this is no longer possible. These services become more onerous and more necessary as the informal settlements grow disproportionately to municipal resources to fund them.

As a result of the large numbers of people living in backyard shacks, illegal and unsafe electricity connections are an ongoing problem. These connections are responsible for at least 80% of the fires that occur in Swakopmund.

The STC has set aside N$ 23 400 000.00 over two budget years for the provision of electricity to individual erven in the PDA. However, this may well be insufficient, and further funding will have to be sourced (Swakopmund 2009).

In the DRC, electricity connections are supplied to facilities that are carrying out high-priority services, such as day-care centres, but there is no electricity for domestic consumption. Paraffin is generally used for cooking, and candles for lighting.

Health Services

Swakopmund has one primary health care clinic, a TB clinic, one state hospital and one private hospital. The spokesperson for the Cottage Medi Clinic reported improved hospital occupancy in the first half of 2007 which could be indicative of a growing workforce in the Swakopmund area. Both the facility and its operating theatres have capacity to cope with many more patients. The spokesperson for the clinic stated that it is difficult to assess the impact that the uranium boom would have on the region, on Swakopmund and ultimately on the Clinic, particularly as the number of people to be employed by the mines could not be established (Ninham Shand, 2008).

The Swakopmund State Hospital has to deal with an influx of unemployed people. Staffing levels and emergency and ambulance services all present problems. Over a three-year period, the number of in-patients regionally increased from 6 to 8 thousand per year, largely people living in informal settlements and backyard shacks. The health services are feeling the strain and the out-patients departments are overcrowded (Ninham Shand 2009).

A critical health concern is TB. The notification rate in Erongo is one of the highest in the world, and most of the infected people are from informal settlements and, in Swakopmund, from Mondesa. Causative factors of TB include poverty and the attendant poor living conditions. Although the HIV/AIDS prevalence statistics in Swakopmund has declined, expectations are that these will escalate again with significant inward migration. Social ills and alcohol abuse are also expected to increase.

3.4.2 Walvis Bay

The estimated population of Walvis Bay is 61,000 (2007). A significant number of migrant workers from other regions move in an out of the town, depending on the seasonal availability of work opportunities, but information on their numbers was not available.

Economy

Walvis Bay is the principal port of Namibia. The economy of the town is fairly diversified. The major economic activities are fishing and the onshore processing of fish. The industry has survived periods of decline and continues to play an important role in the development of Walvis Bay. The need for ship repair and maintenance, both to the fishing and other industries, has led to the emergence of well-equipped engineering firms with a high degree of expertise. The number of support industries to these has increased accordingly.

Investments in the town have been considerable, and are predicted to continue. These include the establishment of an assembly plant by West Coast Truck Exports and the refurbishment of the BP fuel tank storage facility. The Walvis Bay fuel depot is the largest of its kind on the African coast.

The main manufacturing activities take place within the Export Processing Zone (EPZ). The EPZ companies are involved in the manufacturing of plastic products, automotive parts, fishing accessories, bathroom fittings and diamond cutting and polishing. Not only does the EPZ develop the country's manufacturing industry, it also creates much needed employment.

Most of the suppliers and service providers to mining companies are based in Walvis Bay. These range from small engineering companies to larger transport companies and suppliers of fuel and lubricants. An increase in activity in the uranium mining sector has resulted in a significant increase in local procurement, especially in engineering and transport service.

Another emerging sector is tourism. Walvis Bay hosts a number of premier eco-tourism sites, such as Sandwich Harbour and the Walvis Bay Lagoon, an important wetland and a Ramsar site which is the oldest lagoon on the Namibia Coast. The upgrading of the Walvis Bay airport will provide further stimulus for the growth of this sector.

Namport manages the port of Walvis Bay, a key aspect of the local and Southern African regional economy. It is a hub port for Southern and central African Countries, an important railhead and the only natural deep-water port in the country. Fish, mining products and meat are exported from here, and it is also the receiving point for imports of consumables, including machinery and foodstuffs. Due to its link with southern Africa through the various transport corridors, the port is a catalyst for development in Erongo, Namibia and the African countries that use its facilities. .

Services

Walvis Bay receives potable water from 57 boreholes in the Kuiseb River well field and uses recycled sewage water for irrigation of public places. As a result of a series of power outages that affected borehole operations at Swartbank, Walvis Bay has experienced severe water supply crises twice in 2009, and industries have reported N$ millions in losses. The supply of water from the Kuiseb River and the maintenance of the infrastructure are the responsibility of NamWater. At the time of this Report, no solution had been proposed to solve a critical growth problem for Erongo's major industrial centre.

Table 6: Walvis Bay Water Consumption 2004-2008 (Brummer 2009, Pers Comm)[5]

Table 8.3.1 – Water Consumption (m³)				
	04/05	05/06	06/07	07/08
Kuisebmond	1170845	1149985	1150795	1146520
Narraville	332624	330665	345592	358662
Fishing Ind	871748	726718	714366	731994
Langstrand	102880	100636	117714	127334
Dolphin Park	40811	30951	33688	40312
NamPower Proper	1945075	1866564	1993140	2243692
Total	4463983	4205519	4355295	4648314

Electricity

According to a spokesperson for NamPower the current electricity capacity in the various towns in the region are sufficient for intended development. Currently, Walvis Bay consumes 29MVA, and 35MVA is available. No problems for development in the immediate future are foreseen in the town (Kruger, 2007 Pers. Comm., 2007). However, developments in Erongo, particularly in the minerals sector, indicate that substantially more power would be needed in the short-term. An EIA commissioned by NamPower for a coal-fired power station in the vicinity of Walvis Bay has been completed, but no further information on progress is available.

Housing

Five distinct residential areas can be identified in Walvis Bay:

- the formerly "black township" of Kuisebmond, low income groups, with a few representatives of the middle to upper income groups,
- the formerly "coloured" township of Narraville, low – middle income groups
- Walvis Bay Central, middle income groups
- Meersig and Langstrand, upper – wealthy income group

Within the urban areas the living conditions reflect the inequitable distribution of wealth that is one of the characteristics of the Namibian economy. Houses in Langstrand and Meersig are spacious, have expansive views and are at a remove from industrial activity. Kuisebmond and Narraville erven are smaller, as are the houses. In Kuisebmond, as many as ten informal dwellings, plus a formal dwelling, have been reported on one erf. The views from both suburbs are largely of industry and main roads, and this situation is likely to be compounded by proposed new developments, such as the light industrial zone near Narraville.

Walvis Bay has virtually run out of serviced land and the town is experiencing a critical housing backlog. When land does become available (and it will be unserviced) it will cater for all economic sectors, but the emphasis is on the lower and lower-middle income markets sectors, where the demand is. Currently the waiting list for low-cost housing is about one thousand people and the Namibia Housing Enterprise has a list which is in excess of three thousand. In addition, there are the approximately six thousand shack dwellers that are in need of housing (Manale 2008 Pers. Comm.). Property prices in general, as well as rentals, are expected to increase.

Unlike other towns, Walvis Bay does not have demarcated informal settlement areas and this has resulted in the proliferation of backyard shacks in Kuisebmond.

[5] Excluding consumption by NamPort.

Waste. The municipality has a landfill site and five compactors to deal with waste. The desert is also used as a location for dumping waste, as the sand quickly covers the material. There are recyclers for plastic, paper and metals. Hazardous waste is dealt with in an incinerator at the landfill site, which serves the entire region.

Health. Walvis Bay has one state hospital (120 beds), one private hospital, (50 beds), and five clinics serving urban and rural Walvis Bay. The hospital provides services very largely to the indigent and the very poor. Most of the people who are admitted as in-patients suffer from HIV/AIDS-related illnesses or TB, and these two diseases are amongst the ten top health concerns in the town as identified by the state hospital staff. Walvis Bay is a harbour town, and commercial sex is a serious problem. Sex workers participate in HIV/AIDS programmes, but the vicissitudes of their profession do not always allow them to practice safe sex.

Between 2005/6 and 2006/7 the number of new TB cases reported in Walvis Bay decreased but the number of deaths increased for the same time period, as did the number of drug resistant cases (Dreyer, 2008, Pers. Com.). In 2008 the Walvis Bay State Hospital was treating in excess of twenty multi-drug resistant patients and two XDR-TB (Extremely Drug Resistant Tuberculosis) cases (BayNews, 2008).

Social. The health problems discussed above are related to poverty and poor living conditions. Inward migration of job seekers is a problem, as large numbers of these people find accommodation in backyard shacks. The estimated number of people living in such accommodation in Kuisebmond in 2007 was six thousand (Kruger 2007, Pers. Comm.). The shacks are regarded as the biggest source of TB.

Alcohol and drug abuse, also usually associated with poverty, unemployment and poor living conditions, is a significant problem, and the hospital regularly has to treat the results, such as stab sounds. Domestic violence is prevalent, especially from the 20th to the end of the month. During that time three to four cases occur a week, and they are very violent. The rate of attempted suicides is high, and averages twelve a month. Most of the attempts are made by women and most are Kuisebmond residents (Lekobane, 2009, Pers. Com.).

According to a spokesperson for the Walvis Bay Municipality, the main influx of people is work seekers who have heard about new industries being set up. They normally do not return to their place of origin, but remain in Walvis Bay. This increases the unemployment rate and puts pressure on service provision, such as affordable housing.

3.4.3 Education – Swakopmund and Walvis Bay

The two towns are served by the following number of schools:

- State secondary schools - Swakopmund 5, Walvis Bay 5,
- State Primary schools – Swakopmund 6, Walvis Bay 6,
- Private schools – Swakopmund 3, Walvis Bay 2.

Parents regard the coastal schools as better than those in the rural areas, and choose to send their children there. . The schools also have to accommodate the children of those work seekers who bring dependents with them. This has resulted in the severe pressure on capacity and resources that is being experienced by the schools in Walvis Bay and Swakopmund.

The Ministry of Education (Erongo Region) has embarked on a programme of upgrading hostels and making additional classrooms available, especially at those schools where teachers are teaching in two shifts. The private schools have indicated that, should funding become available, they would be willing to expand.

State schools offer a good range of sporting activities, and schools throughout the region are very active in sports, including rugby, soccer, tennis and athletics. Private schools, because of a lack of facilities, only offer limited sporting activities.

The phenomenon of illiteracy in learners in higher grades is a regional one. The Rössing Foundation is addressing this at a number of schools. Only two schools in the region offer technical subjects at secondary level. The problems experienced in mathematics and science tuition persist, even though these subjects are offered by all schools. The Rössing Foundation is assisting in this respect as well.

There is no way of ascertaining to what extent the inflow of workers and employment seekers have impacted on education services, as mining companies to not maintain employee profiles. .Although most of LHU's workforce was recruited locally, a spokesperson for the company is of the opinion that most of them come from the northern regions (LHU, 2009), and it is not possible to estimate how many of them brought their families with them.

An initiative by the Chamber of Mines of Namibia to facilitate co-operative engagement of the various mining companies with educational authorities has reportedly not progressed.

As far as learner numbers are concerned, Walvis Bay is the fastest growing town in the country. Every year, in addition to normal growth, the schools start with about 150 more learners than the projected figures for the year. The Ministry of Education is accommodating the overflow in rented facilities and by shift teaching. Extra classrooms are being built and plans have been approved for a school which will be ready by 2010. The new school will be a combined primary and secondary school, which will accommodate 840 children. With the interventions in Swakopmund and Walvis Bay, the authorities are looking at having enough places for learners by 2012, which is when most of the mines go into operations. Although the school system would be in a better position than it is in currently, a substantial increase in numbers in 2013 would be difficult to accommodate (Awaseb, 2008, Pers. Com.).

3.5 Farming community

Closer to the Langer Heinrich Uranium Mine than either Swakopmund or Walvis Bay are a number of privately-owned farms. The distance of the farms from the Mine Lease Area ranges between 20 and 42 kilometres as the crow flies.

Some are guest farms, and so part of the tourism sector. All run livestock, some run game, all are fenced and all draw water from boreholes in the Swakop River. All the farms create employment, and the benefits of this are increased by the fact that employees families live with them on the farm.

The farmers are conscious of the necessity for eco-system conservation, and some of the farms have floral species as impressive as those in the Namib Park itself. These include quiver trees and giant welwitchias.

3.6 The Topnaar community

The Topnaaar community lives in scattered groups along the lower reaches of the Kuiseb River. As the crow flies, they are 80-100 distant from the Langer Heinrich Uranium Mine. The communities comprise approximately 1500 people. Of these, 800 reside along the Kuiseb River, while the rest have found employment in Walvis Bay and further afield.

Part of the settlements fall within the NNP, while the rest lie within the Walvis Bay townlands. This latter section includes the important !nara [6] fields, traditionally a source of food for the Topnaar, and now a source of income. The community's economic life is closely linked to Walvis Bay. The town is a supplier of goods, a market and a place of employment.

[6] The !Nara plant is endemic to the central Namib Desert. The thorny melons provide some nutrition and income for the Topnaar who live along the Kuiseb River. The seeds, which are eaten as snacks, or from which the oil is extracted, provide some cash income. The important role that the !Nara used to play in cultural life and in family and clan structures has declined, as has its use as an important food source.

Livelihoods activities are harvesting the !nara fruits for sale, small livestock farming, particularly goats, small gardens, mainly for own use, and wage employment. Income from the latter, often by way of remittances, is an important source of cash in the community. There is also considerable reliance on state pensions.

Water is sourced from boreholes for some settlements, while others depend on piped water from NamWater. There is a primary school with a hostel, and a clinic. None of the settlements has electricity, and the nearest source of consumer goods and services is in Walvis Bay.

The possibility of extending livelihood activities and economic opportunities through tourism has been recognised. The Topnaars have a community-owned camping facility at Lauberville and a concession for a 4X4 route along the Kuiseb River. A professional trophy hunting concession in the NNP has been granted to the community, who is busy finalising an agreement with an operator. The first concession to build a lodge in the NNP was granted to the Gobabeb Institute in February 2009, and this could also benefit the Topnaar community through employment during construction, training and employment in hospitality and tour guiding and opportunities for service provision, including crafts for sale to tourists (Economist, 2009).

4 INTRODUCTION TO THE SOCIAL IMPACT ASSESSMENT REPORT

This Social Impact Assessment (SIA) forms part of the Environmental Impact Assessment (EIA) commissioned by LHU for the Project. The assessment is guided, in particular, by the following:

- the objectives of the Draft Procedures and Guidelines for Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) (GRN, 2008), which are to ensure:
  - that decisions makers are fully informed of the proposed activities, and accountable for their decisions,
  - that as many options and alternatives as possible to the current expansion plans are considered,
  - that all sectors of Namibian society who could be impacted by the mining operation, whether positively or negatively, are consulted and given the opportunity to participate in the EIA, and
  - that sustainable development, both inter- and intra-generationally, is promoted by ensuring that negative impacts are avoided or minimized and positive impacts are enhanced.
- the Constitution of Namibia (1990) in which the principles of sustainable development are implicit: the “State shall actively promote and maintain the welfare of the people by adopting policies aimed at the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia, and utilisation of living natural resources on a sustainable basis for the benefits of all Namibians, both present and Future”.
- the Equator Principles[7], which, for the purposes of this project, require the SIA to address the following:
- assessment of baseline environmental and social conditions,
- requirements under host country laws and regulations, applicable international treaties and agreements,

[7] *The Equator Principles are a benchmark for the financial industry to manage social and environmental impacts arising through projects financed by participating financial institutions. For more information, see www.equator-principles.com*

- protection of human health, protection of human rights and community health, safety and security (including risks, impacts and management of project's use of security personnel),
- use and management of dangerous substances,
- socioeconomic impacts,
- impacts on affected communities, and disadvantaged or vulnerable groups,
- cumulative impacts of existing projects, the proposed project, and anticipated future projects,
- consultation and participation of affected parties in the design, review and implementation of the project
- consideration of feasible environmentally and socially preferable alternatives.
- The Precautionary Principle is applied to all development projects that aspire to meet international best practice and which seek to minimise potential negative impacts on the environment and the communities. The Precautionary Principle states that the worst-case must be assumed for all impacts which cannot be assessed due to a lack of data.
- The International Finance Corporation's Performance Standards on Social & Environmental Sustainability, which stipulate that the objectives of an SIA are:
- to identify and assess social and environment impacts, both adverse and beneficial, in the project's area of influence,
- to avoid, or where avoidance is not possible, minimize, mitigate, or compensate for adverse impacts on workers, affected communities, and the environment,
- to ensure that affected communities are appropriately engaged on issues that could potentially affect them,
- to promote improved social and environmental performance of companies through the effective use of management systems (IFC 2006).
-

4.1 The purpose and nature of an SIA

A project proponent has the obligation to ensure that parties who are interested in and/or could be affected by the proposed project are fully informed and consulted. This SIA addresses concerns raised by stakeholders during the concurrent Public Participation Process and the consultations for the SIA.

A SIA is undertaken before development activities start, and methodically examines the socio-economic and cultural contexts of any community, institution, organisation or individuals that could be impacted by the proposed development. It identifies potential impacts, both negative and beneficial, and in so doing can influence the planning process by presenting project proponents with alternative development possibilities and a sound basis for their decisions.

An SIA cannot produce conclusive or empirical statements about the results of impacts. Impacts are identified and assessed against conditions in the receiving environment, which is not a static one, and

in terms of the future, which is always uncertain. Because a community consists of interlinked activities, trends, problems and circumstances, impacts cannot be assessed on a stand-alone basis. Mitigation of one negative impact very often depends on the mitigation of another, and potential benefits may possibly not be optimized because a negative baseline condition or future impact cannot be mitigated. The SIA will necessarily arrive at conclusions which will, to some degree, be subjective.

4.2 Terms of reference

This SIA has been conducted in accordance with the terms of reference, which require a study of the potential social and economic impacts of the proposed expansion project. The particular terms of reference were to:

- review existing social and economic data;
- interrogate the social and economic issues that were identified in the public participation process;
- interview relevant stakeholders;
- to assess the potential positive and negative cumulative social and/or economic impacts; and
- provide input, together with Metago, other specialists and LHU, into the management measures going forward.

5 METHODOLOGY

5.1 Introduction

Project planning meetings were conducted to ensure that the public participation process addressed the concerns of and included the stakeholders relevant to both the environmental and the socio-economic assessments.

LHU provided the requested background literature, and gaps were addressed and information updated mainly by focus group and key informant meetings. Electronic and telephonic interviews were also conducted.

5.2 Identification, assessment and categorisation of expected impacts

The public participation process, stakeholder engagement, knowledge of the mining process and the literature surveys facilitated the identification of critical areas to be addressed. A consideration of the resources, capacity and resilience of the receiving environment to cope with potential negative aspects, or maximise potential benefits, made the identification of likely impacts possible. The following aspects influenced the identification of impacts:

- the socio-economic baseline conditions in the communities of interest,
- the historical reaction of communities to large-scale impacts,
- knowledge of the sustainability of communities,
- the national, regional and local developmental context of the communities,
- the capacity of major stakeholders,
- input from the public participation process,
- experiences of communities in similar contexts and with similar socio-economic profiles,, and
- professional opinion and experience. This aspect is open to subjectivity, and consultation and deliberation with the EIA team were undertaken to ensure that subjectivity was avoided to the greatest extent possible.

A standardised and internationally recognised methodology is applied to assess the significance of the potential socio-economic impacts of the Project.

Table 7: Rating Criteria for LHU's potential socio-economic impacts (Metago, 2009).

PART A: DEFINITION AND CRITERIA (H = high, M= medium and L= low and + denotes a positive impact.		
Definition of SIGNIFICANCE		Significance = consequence x probability
Definition of CONSEQUENCE		Consequence is a function of severity, spatial extent and duration
Criteria for ranking of the SEVERITY of environmental impacts	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action. Irreplaceable loss of resources.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints. Noticeable loss of resources.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints. Limited loss of resources.
	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.
Criteria for ranking the DURATION of impacts	L	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.
Criteria for ranking the SPATIAL SCALE of impacts	L	Localised - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national

PART B: DETERMINING CONSEQUENCE

SEVERITY = L

DURATION	Long term	H	Medium	Medium	Medium
	Medium term	M	Low	Low	Medium
	Short term	L	Low	Low	Medium

SEVERITY = M

DURATION	Long term	H	Medium	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Low	Medium	Medium

SEVERITY = H

DURATION	Long term	H	High	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Medium	Medium	High
			L	M	H
			Localised Within site boundary Site	Fairly widespread Beyond site boundary Local	Widespread Far beyond site boundary Regional/ national
			SPATIAL SCALE		

PART C: DETERMINING SIGNIFICANCE

PROBABILITY (of exposure to impacts)	Definite/ Continuous	H	Medium	Medium	High
	Possible/ frequent	M	Medium	Medium	High
	Unlikely/ seldom	L	Low	Low	Medium
			L	M	H
			CONSEQUENCE		

5.3 Assessment of the socio-economic impacts of LHU's current and proposed operations.

LH commenced production in 2007. The mine operates under the approvals of a mining licence (ML 140), an environmental impact assessment (EIA) and an environmental management plan (EMP).

Each assessed impact of the Project is preceded by an assessment of the socio-economic impacts of LHU's operations in Namibia to the date of this Report. The assessment is based on current available information: from websites, media releases, interviews with stakeholders and I&APs and information and documentation supplied by LHU staff in Namibia, including the company's Environmental Management Plan of 2008. A large part of the assessment will, by the nature of the impacts and the records relating to them, be qualitative, and some part of it will be based on the historic and generic impacts of mining operations.

The following abbreviations are used in this section:
Con. (Construction), O (Operation), D (Decommissioning), Cl. (Closure).

5.3.1 Employment creation

The construction phase of a mining project is generally labour intensive, and usually employs more people than are required during the operational phase. The relatively large number of jobs created for the construction phase must be weighed against the temporary nature of the employment.

During the construction of the LHUM, 700 employment opportunities were created. The average employment rate during the second phase of construction was 250, and this peaked at approximately 1000. The Project will create a further 250 employment opportunities.

Most construction workers are already employed, and the Project will contribute to the stability and continuity of employment and will lead to the creation of additional employment during construction. In the current economic climate, this is a significant benefit of the Project.

LHU currently employs 200 permanent employees and 197 long-term contractors. For steady-state operating conditions a further 38 permanent employees and 48 contractors will be required. The dependency ratio in Namibia was estimated to be 8.8:18 in 2003. Dependency ratios as high as 30/40:1 have been reported in the northern labour-sending regions. The contribution to livelihoods of nearly 400 long-term jobs is therefore significant.

The multiplier effect magnifies the benefits of employment created by the development and expansion of the Langer Heinrich Uranium Mine. One job on the mine potentially results in several jobs in the secondary and tertiary sectors, and further employment is created and development stimulated.

Secondary industries and commercial enterprises will be needed to further meet the needs of the mine for contract services and the needs of consumers as more expendable cash becomes available in the towns. The need for additional housing and business premises will stimulate the building industry. These will all create further employment opportunities.

Unemployment levels in communities affected by LHU are high, and the majority of unemployed people are unskilled or have low-level skills. Jobs created by most modern mining operation are predominantly skilled and thus beyond the immediate reach of the majority of the unemployed in Erongo Region.

[8] *www.nationmaster.com/graph/hea_dep_rat_per_100-health-**dependency-ratio**-per-100 - 87k -*

Impact 1: The construction phases of the Project will provide additional employment opportunities and development benefits.

Rating	Comment
Nature +	In an environment of high unemployment and job uncertainty, substantial job creation has a positive impact.
Severity =M	The opportunities for livelihoods and the enhancement of socio-economic conditions are noticeably increased, especially as every job created means livelihoods for a number of dependants. There will be a temporary improvement of the unemployment situation, and the severity of the impact is further limited by the fact that some of the workers employed during construction will already be in employment with the different contractors.
Duration = L	Once the construction period is complete, the need for the construction workers employed on the Project will cease.
Spatial scale = H	Employment will be created locally and regionally, and local economies will benefit from an inflow of disposable cash. Remittances sent to labour-sending regions will provide livelihood necessities and those economies too, will benefit from an extra inflow of cash, albeit more limited than local inflow.
Phase = Con	The impact will endure throughout the construction phase and will cease on commencement of operations.
Probability = H	Additional employees will be needed during the construction phase.
Consequence = M+	
Significance = L+	

With appropriate intervention, the benefits of short-term employment can be increased.

Impact 2: The operational phase of the Project, will provide additional long-term employment opportunities with attendant development benefits to those already offered by current operations.

Rating	Comment
Nature = +	Although fewer jobs will be created during the operational phase, they will be permanent and long-term.
Severity = M+	The severity of current employment at LHU is high. For Phase 3 the severity will be moderate as considerably less numbers of employment opportunities will be offered. Livelihoods security will be advanced, and opportunities will be created for training and advancement in the workplace. There has been a marked impact on the surrounding economies through direct cash injection and the growth of service industries and this impact will continue noticeably. The impact on local authorities will be limited by the smaller number of new employees who will require accommodation and the office infrastructure that LHU has already in place.
Duration = H	Potentially the benefits could last beyond mine closure, even though employment numbers will decrease progressively during decommissioning and closure.
Spatial Scale = H	As for employment creation during construction, the benefits of employment during the operational phase will be experienced locally, regionally and nationally.
Phase = O,D, Cl,	
Probability = H	The Project will require additional employment.
Consequence = H+	
Significance = H+	

With appropriate intervention, the benefits of employment can be increased.

5.3.2 Local economies

Individual mines, particularly modern and technologically advanced ones, are no longer as labour-intensive as they used to be. However, they are still significant drivers of economies beyond the mine site. The multiplier effects of payments benefitting employees, and payments to regional and national suppliers, extend the economic benefits significantly. The wages that workers spend stimulate the local economy, including that of the local authority. LHU workers send remittances to dependants in labour-sending areas, which are often underdeveloped. These remittances contribute to poverty alleviation and provide access to education, health care and the maintenance of agricultural activities.

Payment to local and national suppliers stimulates economic activity and creates employment in non-mining sectors.

Information provided by LHU states that, currently 66% of LHU's service providers and suppliers are Namibian. Of this percentage, 75% is from Erongo Region.

It was not possible to estimate the amount by which the local authority's revenue base increased, as it is not known how many of LHU's employees are homeowners or tenants, and whether they live in formal or informal accommodation. Nonetheless, it can reasonably be assumed that a significant percentage of employees pay for services from local authorities. LHU pays for services to its corporate offices in Swakopmund.

Impact 3: Local and regional economies will be positively impacted by increased spending of the workforce and to meet the needs of LHU's expanded operations.

Rating	Comment
Nature +	
Severity = M+	Opportunities for increased employment in non-mining sectors will be created by the increased service and supply requirements of the Project, and to a more limited extent, the increased cash available as a result of the expanded workforce.
Duration = H	The impact will last through all phases, but the benefits will decrease with decommissioning and closure as the need for a large workforce and large-scale service provision and supplies scales down.
Spatial Scale = M	The major benefits will be experienced in Swakopmund and Walvis Bay
Phase = All	
Probability = H	The probability of the impact occurring is high. Service payments to local authorities and the purchase of everyday necessities are not optional. LHU will, as in the past, source its additional supplies and services from local service providers and suppliers as far as possible
Consequence = H+	
Significance = M+	

The impact can be optimised by a continued and increased support for local service provision and suppliers.

5.3.3 Infrastructure[9]

A significant increase in economic activity inevitably places greater demands on infrastructure. Where a large development project, such as the Langer Heinrich Uranium Mine, shares infrastructure with other users and consumers, this may impact on the use and/or availability of infrastructure to the general public. Water, energy and transport routes are the shared infrastructure services considered in this section. Road use is the transport method which is of most concern to stakeholders and I&APs interviewed for this Report.

Traffic

Three public roads are subject to significant use for the purposes of the Langer Heinrich Uranium Mine. These are shown on Figure 5.

- Access to the C28, the NNP, Windhoek and Langer Heinrich leads off the B2 approximately 6 kms from Swakopmund. The access road to the mine site branches off the C28, about 50km from Swakopmund.
- The C34 branches off the C28 and follows a route behind the dunes to join the C14 leading to Walvis Bay. This is the approach and return route to and from Walvis Bay for both commuter buses and service providers to the Langer Heinrich Uranium Mine.

[9] IFC Performance Standard No. 1 (5) (6)

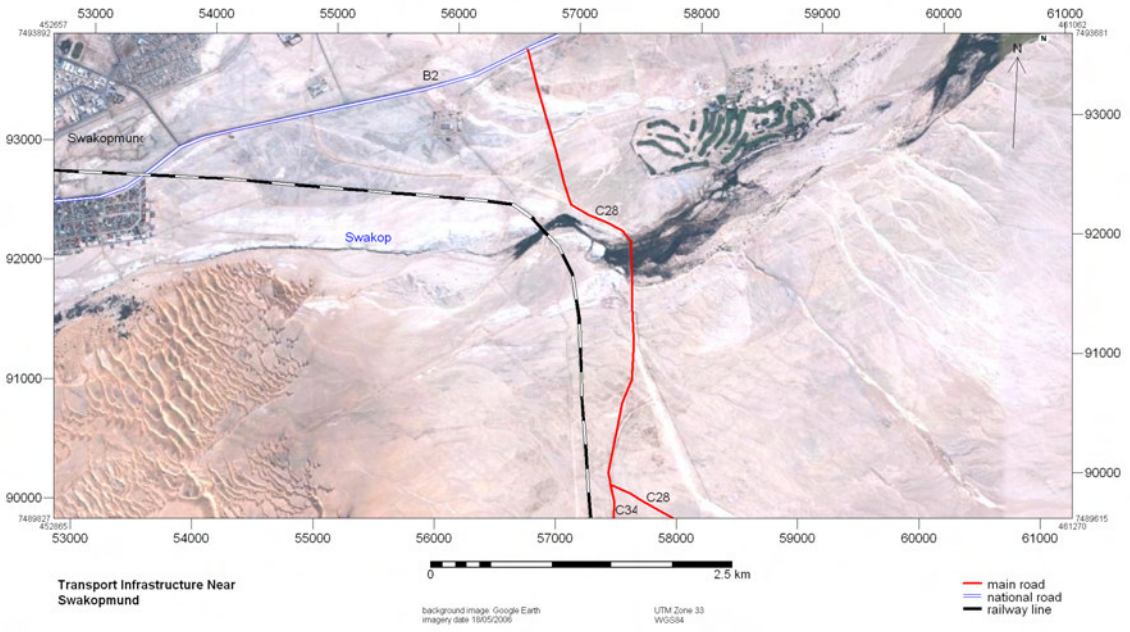

Figure 5: Main roads used for the purposes of Langer Heinrich Uranium Mine

Two of LHU's major transport carriers were interviewed for the purpose of this Report.

- Sunshine Tours, based in Swakopmund, undertakes the commuter transport for LHU and some of the company's contractors. Commuters in Swakopmund and Walvis Bay use this service.
- Wesbank Transport, based in Walvis Bay, is the main transport contractor doing normal, abnormal and chemicals tanker deliveries to LHU.

LHU provided information on other transport to and from the mine site, and this has been taken into consideration when estimating the company's road use.

Estimated road use by scheduled service providers to LHU at the time of this Report was:

- Commuter bus traffic (Sunshine Tours) from Swakopmund, using the C28 – daily average one-way journeys over one week – 24
- Commuter traffic from Walvis Bay (Sunshine Tours) using the C34 (on to the C28) – daily average one-way journeys over one week – 6
- Wesbank Transport – from Walvis Bay, (C34 and C28) a weekly average of 100 one-way trips. The company also uses a limited number of LDVs for maintenance and special requirements.
- Light delivery vehicles from Swakopmund – daily average one-way journeys over one week (five-day week assumed) – 10
- Heavy duty trucks from Walvis Bay (C34 and C28) – 16 trips a week (six-day week assumed)
- Light delivery vehicles from Walvis Bay (C34 and C28) – daily average one-way journeys over one week (five-day week assumed) – 12 trips

(LHU, 2009, van Rooyen 2009, Pers. Comm, du Plessis 2009, Pers. Comm)

Light delivery vehicles using the roads at greater intervals – once a fortnight, month or quarter – are not reflected here.

There is expected to be an increase in this traffic for the Project. Traffic during construction is heavier than during the operational phase.

Neither the C28 nor the C34 were built for tarring or for heavy traffic. The C34 was originally built as a gravel road, and was recently converted to a salt-wearing road to divert heavy traffic from the B2 between Walvis Bay and Swakopmund. A recent report, based on information from the Roads Authority, concluded that the road is attracting traffic (Ninham Shand 2009), but there is no historic data to indicate to what extent an increase is due to traffic to Langer Heinrich Uranium Mine. There are apparently no immediate plans to convert this road to a tar road. A spokesperson for the Roads Authority stated that a decision to do so would depend on needs and traffic. If the road users consult the authority and inform them of their anticipated road use, consideration could be given to tarring, but this would need support from all stakeholders (Uiseb, Pers. Com. 2008).

Both Wesbank Transport and Sunshine Tours use the C34 in providing services to LHU. All vehicles used for transport have speed control mechanisms, either through satellite tracking, governors and/or speed recording on the vehicle, which is monitored at the base stations. All drivers undergo continual training. Sunshine Tours' drivers have to undergo medical check-ups every six months. The speed limit for all commuter and transport vehicles on all roads is 100 kph. Wesbank Transport has its own weighbridge, and LHU is installing a weighbridge on site.

The C28 is a gravel road, intended primarily for use by tourists. In the last few years it has increasingly been used for mining activities in the park, with this usage escalating as exploration by a number of mining companies increases. The condition of this road is also the main reason for the concerns of I&APs.

The C28 is a national road and maintenance can only be done by the Roads Authority. LHU provides funding for maintenance and/or upgrading on it, and the company has funded "dust free" strips along the section from the start of the C28 to the LHU access road, The Company funded the upgrading to the extent of N$ 10 million over the last three years. Currently there are eight strips of approximately 2 kilometres each. The company is now funding the tarring of the section from the first pump station to the LHU access road.

The spokesperson for the RA commented that LHU should have started tarring from the turn-off from the B2, and the spokesperson for Wesbank Transport also said that the poor condition of this section presented the company with problems (van Rooyen, Pers. Comm. 2009).

Stakeholders commented extensively on the condition of the roads and the implications for other road users.

- Road conditions on the C28 are particularly dangerous for drivers who are not familiar with the nature of Namibian gravel roads.
- Concern was expressed that hazardous material, fuel and sewage was being transported on poor roads. [10]
- Speeding is dangerous on C28's road surface. No problems were expressed with the commuter buses, but smaller vehicles travelling to Langer Heinrich mine site are reportedly travelling at excessive speeds. No information was available on measures to ensure safe driving by small and individual service providers.
- Dust affects visibility and makes it difficult to overtake and to see obstacles, such as game, on the road. No road spraying is undertaken to mitigate the dust generated by construction on the C28. Comments were also received about excessive dust caused by buses travelling too close to each other, which nullifies the benefits of the dust-free strips.
- Loose gravel damages vehicles, and two I&APs commented that they regularly had to replace windscreens as a result of flying gravel caused by other vehicles.
- With no return loads, vehicles are exposed to severe vibration and require more service attention.

[10] IFC Performance Standard No. 4 (7)

- Vehicles collect dust and corrosive material. They require daily high pressure washing which aggravates maintenance and devaluation.
- Three road kills involving LHU vehicles have been reported. Road-kills are ascribed to dust, night driving and speeding (LHU, 2009).
- The Roads Authority and their sub-contractors do not clean up when they have been working on the road. Poor environmental control results in damage to flora. An informant to this Report commented that there could well be a lack of environmental awareness in the labour force working on the roads.
- The RA commented that, as a result of the increased road-use by heavy traffic servicing the number of mining operations, it cannot keep up with the normal maintenance on the C28. It takes three days for the bladers to grade the road, and on the third day the road has already started deteriorating at the start.
- The RA undertakes normal grading, not maintenance, on the C34. Maintenance is sub-contracted, and the last contract expired in January 2009. This had not been renewed at the time of this Report.

(Pers Comms 2009. Beytell B, van Rooyen M , du Plessis J, Berry, H & Braby R, Uiseb,V, Solomon R , Leippert M)

Impact 4: Current and future road use by LHU for conveying its workforce to the mine site, and by service providers to LH, could impact on the safety of LHU personnel and on the safety and enjoyment of the roads by other road users.

Rating	Comment
Nature -	
Severity = H	There is a possibility of injury or death to people and game and damage to vehicles. The severity is increased by the number of people on the commuter buses, which means that a bus accident could lead to multiple injuries and/or fatalities. The potential will increase with the increased road use that will occur, particularly with construction, in the near future.
Duration = M	There will be a decrease in the amount of road traffic once construction is complete, but the impact will only cease finally on closure.
Spatial Scale = H	With the exception of the mine access road, the roads the roads that are used for LHUs' requirements are also used for transport and travel on a regional basis – by tourists, commuters, other mining companies and industries in Walvis Bay. Walvis Bay is the start of the Walvis Bay Corridor and the Trans-Kalahari Highway.
Phase = All	The impact will decrease with decommissioning and closure, and will then cease
Probability = H	Road and driving conditions increase the risk of road accidents. From Swakopmund to the turn-off from the B2, mist is a frequent occurrence and decreases visibility. Further hazards are sand blowing across the road on the C34 and dust on the C28. These conditions make overtaking difficult, in addition to which both the C34 and the C28 have seriously deteriorated in places. On the C28 game crosses the road, or grazes at the side. There have been three road-kills by vehicles on LHU business on the C28. No other routes are available for the purposes of the LHUM.
Consequence = H	
Significance = H	

With appropriate intervention, this impact can be mitigated, but it cannot be reversed.

Water

LHU's water consumption and water management is a cross-cutting issue. The Specialist Report has been undertaken for the EIA, and it addresses water issues comprehensively. That Report forms part of the Environmental Impact Assessment Report.

Energy

LHU's current maximum demand is 17 MW. A further 5 MW will be required for the Project. NamPower is in a position to supply this from the national grid. LHU currently has 10 MW on-site generation capacity installed, and this could be increased by a further 20MW in terms of on-site generation approval.

The following is a summary description of the current and predicted future situation with regard to electricity capacity, consumption and demand in Namibia.

Total requirement forecast for year 2010	+-600 MW
Absolute maximum internal generating capacity	+-392 MW
Hwange	150 MW
From South Africa	+-80 MW
Available capacity	**+-622 MW**
Potential options for sourcing additional energy	
Caprivi link	75 MW
Ruacana 4th Turbine-Generator	35 MW
Paratus	10 MW
Total from potential external sources	**120 MW**

The potential sources listed above are those that recent information indicated were the most likely to proceed in the short-medium term. There are a number of other potential options for boosting Namibia's internal capacity, but it was not possible to access information on progress towards implementing these options. They include the Orange River Hydro (100 MW), Kudu Gas (450-800 MW) and Walvis Bay Coal (200-800 MW).

South Africa is Namibia's major supplier of energy, and that country is currently experiencing a decrease in demand as a result of the global economic crisis. The possibility of South Africa reducing its energy exports to Namibia is therefore in abeyance.

According to the above scenario, the additional 5 MW that LHU will require for the Project will not impact on the availability of electricity to other consumers.

5.3.4 Inward migration

Inward migration is a global phenomenon associated with significant economic development projects. In a context such as that of Erongo, it is not possible to access data on the degree to which any one project has resulted in inward migration. This is a cumulative impact resulting from more than just mining activity. Nonetheless, it is incumbent on individual developers to ensure that they mitigate, within their own sphere of influence, the social ills that accompany inward migration. These include poor housing, the spread of HIV/AIDS and TB, alcohol and substance abuse, commercial sex and domestic violence.

In Namibia there is a misalignment between employment opportunities and population density. Most people live in the north, whereas most job opportunities arise in the central and coastal regions. Combined with the high unemployment rate, this mismatch leads to a significant degree of economic migration in the country. Walvis Bay and Swakopmund are two of the main destinations for work-seekers. They are lured by the perceived opportunity for employment in the fishing industry, the growing uranium sector and the significant number of large-scale development projects which have been proposed for the region.

No particular development project can be identified as the cause of the large-scale in-migration that occurs in Erongo. Inward migration commenced before LHU operations commenced, but, in all likelihood, the announcement of commencement of activities by LHU did create further perceptions of employment opportunities, and did add to the number of people migrating to the coast in search of jobs.

Impact 5: The perceived job opportunities offered by the Project will lead to further inward migration of work seekers to Erongo Region.

Ranking	Comments
Nature = negative	The impact is negative and cumulative. Inward migration of unemployed people increases local unemployment and the number of people living in inadequate, unsafe and unhealthy accommodation. Poverty, ill-health and social ills also increase, and greater demands are made on the resources of local and regional authorities and service providers.
Severity = M	The severity is moderate. Living conditions for some people will decline, and there will be additional demands on service providers. The local unemployment rate will increase and poverty levels will increase.
Duration = H	There are few legal instruments for controlling migration and settlement in Namibia. Experience in other mining towns, such as Rosh Pinah, has indicated that migrants will move to new mining developments and, in the absence of other pull factors, do not easily move on. Informal settlements are thus essentially permanent.
Spatial Scale = H	The impact will be felt locally and regionally. Resources which are needed for development in remote areas, such as health and education services, could be diverted to meet the needs of indigent settlers in the urban centres.
Phase = Construction and Operation	The impact has already commenced and will continue through construction and operation, essentially for as long as there is a perceived possibility of employment.
Probability = H	Inward migration as a result of mining activity has already commenced, and historical precedents, indicate that the impact is definite.
Consequence = H	
Significance = H	

This impact will be difficult to mitigate, and it will not be reversed.

5.3.5 Public consultation and disclosure[11].

The term “stakeholder engagement” no longer refers to a process conducted during an EIA process, and between appointed consultants on the one hand, and stakeholders and I,&APs on the other. In most countries, public consultation around EIAs and EMPs is a regulatory requirement, and this type of consultation falls outside the scope of this discussion.

The term “Public consultation and disclosure” indicates an activity which is a “broader, more inclusive and continuous process between a company and those potentially impacted that encompasses a range of activities and approaches, and spans the entire life of a project” (IFC, 2007). IFC requirements in this regard are comprehensive, and include a process that is inclusive (with emphasis on marginalised groups), comprehensive, transparent, accessible and appropriate to the communities within which it is conducted.

(IFC 2007)

The advantages for a company of transparent, proactive and appropriate consultation and engagement include

- the opportunity to establish a positive presence within the stakeholder community,
- the opportunity to influence public perception of the company,

[11] IFC Permance Standard No. 1 (19ff)

- safeguarding its social licence to operate,
- ensuring that a lack of information does not lead to misinformation, and
- engendering trust in the company from the society within which it operates.

For stakeholders, the process:

- makes knowledge available about events that could affect them,
- gives them an opportunity to provide input into a development project, so potentially having a say in the design and operation of the project and assisting the company to avoid or mitigate negative impacts, and
- provides a mechanism for expressing their grievances and having these addressed.

A stakeholder engagement process is a long-term business function, and should be based on an appropriate and clear strategy which sets out objectives, time frames, roles and responsibilities and budget.

In the 2008 EMP, LHU makes a commitment to inform stakeholders of aspects of its activities which are of great interest to the public. These include resource use, waste management and biodiversity. The programme for community communication management as envisaged in the 2008 EMP has not yet been initiated (LHU, 2008. Section 9.3). Public consultation for this Report indicates that LHU does not undertake comprehensive and inclusive consultation and information disclosure in its communities of interest. Stakeholders commented that a lack of information:

- makes their own planning difficult,
- increases their concern about unaddressed issues, and
- leaves them feeling helpless in the face of developments which seem to ignore their concerns and about which they were not consulted.

The majority of stakeholder representatives interviewed for this report stated that the company had not been in touch with them.

LHU has in place a Communication Procedure which deals with corporate communication and, extensively, with internal communication. This latter aspect is important for the purposes of this Report as employees are also community members, and communicate information about the company to their community. However, this is not a sufficient channel of communication with communities, nor does it allow for the development of a partnership between them and the company.

The Company did, briefly, conduct public meetings, but these were not well attended and so were discontinued. The information presented on the Paladin Energy Ltd website is largely technical in nature and would be inaccessible to many community members. It is questionable whether either of these two communication methods is appropriate for public consultation and disclosure in a developing country.

Impact 6: The lack of a formal and appropriate public consultation and disclosure strategy could impact negatively on the company, its communities of interest and on potential partnerships between them.

Rating	Comment
Nature -	The impact is negative for both LHU and its communities of interest.
Severity = M	Numerous complaints have been received about a lack of engagement, and there is, in general, a low-level negative perception of the company as a result of this.
Duration = M	Without mitigation, the impact will be felt through all phases of the life-of-mine.
Spatial Scale = M	The impact extends through the region, and is mainly experienced in the four communities of interest discussed in Section 3.4.
Phase = All	
Probability = H	The impact is currently operative, and without mitigation will continue to be so.
Consequence M	
Significance = M	

With appropriate intervention, this impact can be reversed and become a positive one.

5.3.6 Employee well-being and workplace policies[12]

Workplace policies are designed to give direction to management, who implements them, and to all employees – the beneficiaries of these programmes – by establishing consistent work standards, rules and regulations. These policies further ensure the company's compliance with governmental policies and are an important part of the company's risk management strategy. Sound policies, properly implemented, ensure employee well-being within the operations of the company and signify a company's commitment to good corporate governance and a culture of human rights in the workplace.

The specific policies requested for this Report relate to employee well-being in and out of the workplace, and also the extent to which relevant company policies are extended to surrounding communities. Policies related to SHER (Safety, Health, Environment and Radiation) were not reviewed for this Report. .

Affirmative Action and Sexual Discrimination policies are established, but most of documents provided were procedures, not policies. Procedures provided were for Maternity Leave, Part-time Study Assistance, Communication, Employment and Induction. LHU has yet to establish most of its policies in regard to employee well-being. In the absence of a representative for organised labour, it was not possible to establish whether this had impacted on the workforce. Some of these procedures, such as those for internal communication and workforce induction, are comprehensive.

Further information was provided on some aspects:

- Health: no HIV/AIDS policy or procedure has been established. Peer educators have been trained through the Chamber of Mines' Occupational Health, Education and Awareness Programme and an HIIV/AIDS Committee is in place. One of the LHU representatives received the award for the OHEAP educator of the year (2008), and a talk on leadership in the world of HIV/Aids was presented at a local school.

[12] IFC Performance Standard 2

No condoms are provided in the workplace. The company has not considered including TB in its health policies.

- Freedom of Association – the company feels that its current interaction with employees is satisfactory, and that there is no perceived need for such a policy. Langer Heinrich is committed to ensuring that all employees are paid at or above the 75 percentile in Namibia. The company participates in national salary surveys for specific job categories, and after each survey completes an assessment to ensure that salaries are aligned with the strategy that has been established.
- The company has a procedure to support part-time study for seven permanent employees annually. Currently two Namibians are enrolled in an Executive Development Program at Stellenbosch University in preparation for potential General Manager Positions.
- The company does not currently have a bursary scheme, and is finalising a scheme to provide assistance to NIMT students.
- All employees must join the company's provident fund to which LHU pays 12% of total costs. All employees must further belong to the company's chosen medical aid unless they prove that they belong to another fund. The company's contributions to these, and to housing, are included in the "total cost to company" which is the package offered to the employee. Employees are free to live where they choose.
- 95% of LHU's employees are Namibian citizens. 20% of the workforce is female, 74% are previously disadvantaged Namibians, and the latter constitute 32% of management.
- The company has an employee share option scheme in terms of which all long-term employees receive share options which enable them to participate in Company ownership.

(LHU, 2009)

Impact 7: A lack of sound, comprehensive and clear policies could impact on the well-being of LHU's employees, workplace relations and the company's reputation for good governance.

Rating	Comment
Nature -	The impact is negative for both LHU and its workforce.
Severity = M	The lack of policies could cause tensions in the workplace, impact on the relationship between LHU and the workforce and negatively affect LHU's public image.
Duration = M/H	The duration is moderate and can be reversed over time. However, there could be long-term effects from a failure to establish health policies, procedures and programmes. The opportunity to skill the workforce for other employment, or for advancement in the workplace, could also be lost, to the detriment of the employee.
Spatial Scale = M	The benefits of the policies contemplated in this section extend beyond the workplace and affect the employees in their role as the members of a family and a community. The benefits of some of these policies, such as health, should also extend into LHU's communities of interest.
Phase = All	Without mitigation the potential for this impact to occur is present throughout the life-of-mine and into decommissioning and closure.
Probability = M	The probability of the impact occurring is moderate and there are a number of ways in which it could manifest itself.
Consequence = M	
Significance = M	

With appropriate intervention, this impact can be reversed and become a positive one.

5.3.7 Corporate Social Investment and Community Development

Corporate Social Investment (CSI) is an integral and essential part of good corporate citizenship and corporate social responsibility. . CSI activities are external to the business, focus on developmental objectives and are undertaken for the purpose of uplifting and empowering communities. They are not primarily undertaken as public relations or marketing initiatives, although positive benefits with regard to public image usually result.

CSI initiatives are undertaken voluntarily by a company, and are distinct from the compulsory taxes and royalties paid to the central fiscus. They are also distinct from the provision and upgrading of infrastructure which is undertaken for the purpose of efficient operation.

In some countries, such as South Africa, CSI is legislated, but many companies go beyond compliance in their CSI activities. CSI is not restricted to developing contexts only, but is widely practiced globally by mining companies.

Ideally, the contribution that private sector development makes to central government would be sufficient for the eradication of poverty and underdevelopment. This is not the case in developing countries, where the extent of development required far exceeds the resources of the state. In Namibia, poverty, underdevelopment and a lack of access to services has resulted in economic migration, with the largest proportion of migrants moving to Erongo and, in particular to the coastal towns. The growing number of urban poor becomes the responsibility of local authorities whose resources to assist them are also constrained.

In the Namibian context, CSI can play a significant role in reversing the historical disadvantages which deny significant numbers of the population, sometimes whole communities, access to economic and livelihood opportunities. LHU's communities of interest include large proportions of disadvantaged and disempowered members. Responsible companies regard it as their duty to initiate or support projects that benefit such people. This is especially true when companies exploit the natural resources of a country and have an impact on the potential for future livelihoods. One of the informants to this Report commented: General conditions should improve, not deteriorate.
(Geldenhuys 2009, Pers. Comm.)

The critical social and developmental issues facing Namibia have been identified in numerous documents, the most important being NDP3 and the Millennium Development Goals. Together with these, regional and local development plans also indicate where assistance would have the greatest impact. LHU's current estimate of life-of-mine is twenty-five years. This is time enough to make a meaningful contribution to development in its communities, and in Namibia.

In the 2008 EMP (LHU, 2008), LHU identifies social upliftment as one of the positive impacts of its mining activities., but no management system is indicated to achieve this. From a review of the company's social spend, it is difficult to establish what the company's vision is, or whether it has one. Funding appears to be provided on an *ad hoc* basis, some of it to the already-privileged, some of it to the destitute. For the period 2007-2009 the company provided details of funding amounting to N$ 1 765 000, although press reports indicate that this figure does not include all the company's donations and sponsorships. The company spokesperson also commented that, as LHU was not yet making a profit, it was not in a position to make substantial social investments. This makes it all the more important that CSI initiatives are undertaken in terms of a strategic plan which promotes CSI in areas where it can have the most impact, and which allows for expansion of the programme as more funding becomes available. The social component of sustainable development carries as much

weight as the other three components of the paradigm, and becomes particularly important in a developing country context.

Impact 8: A commitment to strategic corporate social investment which promotes community development will reflect positively on LHU's reputation for good corporate governance and citizenship, and will provide benefits for LHU's communities of interest.

Ranking	Comment
Positive	The impact will have positive impacts for LHU and its communities of interest.
Severity = L+	As LHU's uranium mine is not yet making a profit, the impact will be of low severity
Duration= H+	This impact will continue through life-of-mine and the benefits will be experienced well after closure.
Spatial Scale = M	While dependants in labour-sending areas will benefit, the primary area of impact will be on LHU's communities of interest in Erongo Region
Phase = All	Community development is not a once-off activity, but one that commences with construction and continues through to closure.
Probability = M	
Consequence = M+	
Significance = H+	

The Social Management Plan will provide recommendations to optimise this impact.

5.3.8 Tourism

Section 3.3.4 discusses the importance of tourism in the Namibian economy. It is viewed as particularly important for the creation of employment and livelihoods opportunities. The section also discusses the vulnerability of the resource base on which tourism in Namibia, and particularly Erongo, is largely based.

Langer Heinrich Uranium Mine is situated in the Namib Naukluft Park, an iconic feature of Namibian tourism, one of the country's most popular tourist destinations and rich in biodiversity and sites of cultural and historic significance. The continued and potential contribution of the NNP to the economy of Namibia, job creation and livelihoods, depends on the preservation of the unique appeal of its desert and wilderness landscapes. These benefits are sustainable, and will provide employment and livelihoods for generations in the distant future if they are protected from the impacts of both industrialisation and uncontrolled tourist activities.

Langer Heinrich Uranium Mine is accessed from the C28, a major tourist route and also an access route to some of the major sites of interest in the NNP. The access road to the mine leads off the C28 to the mine site, which lies behind Bloedkopje, and so is not visible from the C28.

A constraint on assessing this impact is that no baseline information on tourist activity in the area is available, neither for the number of tourists nor the value attributed to it by visitors. However, the precautionary principle requires that a lack of quantitative data is not used as a basis for assuming that no impacts have occurred. Input was requested from people with experience and expertise in the NNP and in tourism, and included tour operators (both niche and large-scale), environmentalists and regulators. The following concerns were raised with regard to the impact of the current operations on tourism:

- The circular route round Bloedkopje had been a favourite 4X4 route of tourists and this is now closed to them. A spokesperson for the MET stated that, in all likelihood, the road would stay closed after closure
  (Beytell, 2009. Pers Comm).
- Tourists who climb Bloedkopje now view a mine site instead of the valley along the Swakop River. The Project is likely to intensify this impact. There is noise pollution at Bloedkopje and Tinkas, which disturbs the previous peace of the campsites. Noise is also heard at Ganab, particularly in summer when the wind blows mainly in a north/north-west direction. (Berry & Braby, 2009, Pers. Comm.) Currently this is described as "remote noise", but concerns have been expressed that noise may become more intrusive with the increase in mining activities.
- The C28 is a favoured route between Swakopmund and Sossusvlei for both large tour groups and self-drive tourists. The road-use environment discussed in Section 4.3.2 is also operative in this impact, particularly for tourists who are not used to Namibian road conditions. The way people experience the road environment is part of their enjoyment of a particular place. Expectations are of a relaxed drive which encourages appreciation of the wildlife and the landscapes. This is not possible currently, as the section of the C28 between the turn-off from the B2 and the access road to the mine is fraught with by-passes, dust, loose gravel and heavy traffic. Infrastructure, borrow pits and heavy equipment transform a wilderness experience into a drive through a construction site and the desert sense of place is lost. The impacts which are solely related to the current road construction phase (by-passes, heavy construction equipment, borrow pits) will cease on completion of the road construction. However, many of the impacts discussed in Section 5.3.3 will remain, and some of them, such as speeding, may intensify. Heavy-duty traffic will also increase during the construction period of the project, which is expected to last for twelve months.

A spokesperson for the MET office at Ganab stated that there had not been a decline in tourism in the NNP, but rather an increase. His statement was based on permit sales at Swakopmund and Walvis Bay and are therefore not conclusive, as permits are also sold in Windhoek and at Sesriem, and the numbers are not collated (Gariseb 2009, Pers Comm).

Impact 9: The Project will impact on the enjoyment of the NNP by tourists and will decrease the value of the park as a source of tourist income, job creation and livelihood opportunities.

Ranking	Comment
Negative	
Severity = M	There will be a measurable deterioration of the particular aspects that make the NNP unique. Complaints are already being aired about the mine's activities, and these will increase as mining activities do.
Duration= M/H	Heightened activity, particularly on the C28, will manifest during the construction phase. After that the disruption of the wilderness experience will continue throughout the life-of-mine.
Spatial Scale = H	The economic impact will be felt by the local and national tourism sector.
Phase = All	
Probability = H	The impacts of current operations indicate that the Project will intensify such impacts
Consequence = H	

Significance = H

This impact cannot be avoided, but its significance can be reduced to medium if appropriate management plans are enacted.

6 CUMULATIVE IMPACTS

A cumulative socio-economic impact is an impact which:

- occurs in a receiving environment which is experiencing, has experienced, or may foreseeably experience similar impacts in the future,
- where there is the potential for synergistic interaction between impacts (i.e. the net impact is greater than the sum of the component impacts), and/or
- where economic or social thresholds may be breached by a number of consecutive or simultaneous impacts, which individually may have not have resulted in impacts.

This Report only identifies and assesses the potential impacts of the Project and proposes mitigation measures for those. However, with the proliferation of uranium mines in Erongo, and potentially in the NNP, it is no longer feasible to manage social impacts in isolation. In this assessment, all the impacts, with the exception of Nos. 6, 7 and 8 are, or may become cumulative impacts. This can change the rating of impacts of individual mines significantly. A few examples illustrate this:

- Traffic on the B2, the C34 and the C28 has not only increased as a result of LHU's activities. Significant traffic services the companies currently doing exploration in the NNP. Rössing Uranium has indicated that, should the company's expansion plans proceed, it will consider using the C34 for heavy duty transport to the mine site (Schneeweiss 2009. Pers Comm). When the cumulative impact is assessed, the rating of Impact No 4 would change and the impact would be more severe. Concerns were also expressed about the impact of increased use of the B2 from Swakopmund. Increasingly trucks and commuter buses will be using this road, where driving conditions, due to frequent mist, are already hazardous.

- Bannerman is proposing that its plant be located between the D1991 and C28 and be accessed from the C28. This will change the impacts on tourism and traffic identified in respect of LHU's activities, and increase their severity (Bannerman, 2008).

- Further public access roads may be closed, notably the D1991 which will limit access to the Moon Landscape and the Welwitchia Plains, both sites of great tourism value.

Additional infrastructure is envisaged, including water pipelines and new access roads.

The benefits of positive impacts, such as local economic development and employment, are magnified with the requirements of an increasing number of mining companies. However, these need to be managed with mine closure in mind, as the withdrawal in relatively quick succession of financial inputs related to mining could impact seriously on local authorities, service providers and commercial and industrial sectors. Unemployment too, could rise dramatically as the need for large workforces decreases.

The MME has commissioned a comprehensive Strategic Environmental Assessment of uranium mining in the Erongo Region, and the study will also address socio-economic impacts. It is anticipated that the study will present recommendations for co-operative management of these impacts.

LHU should use its position in the Uranium Stewardship Committee to ensure that the cumulative social impacts are addressed co-operatively and that social impacts are recognised as the most significant impacts of mine closure and addressed as such.

7 CONCLUSION – SIGNIFICANCE BEFORE AND AFTER INTERVENTION

Cumulative impacts, whether current or potential, affect the confidence with which an assessment of the significance of impacts before and after interventions can be made. The interventions of one mining company, such as LHU, cannot mitigate impacts which are the result of a number of operations. Benefits, too, require an alignment of the initiatives of all role players in order to be successfully optimised and managed.

Significance of social impacts before and after intervention.

Potential Impact	Impact environment	Significance before intervention	Significance after intervention
The construction phases of the Project will provide employment opportunities and development benefits.	Employment creation – construction	Low positive	Moderate positive
The operational phase of the Project will provide long-term employment opportunities and development benefits.	Employment creation – operation	High positive	High positive
Local and regional economies will be positively impacted by increased spending of the workforce and to meet the needs of LHU's expanded operations. .	Local economic development	Moderate positive	High positive
Current and future road use by LHU for conveying its workforce to the mine site, and by service providers to LH, could impact on the safety of LHU personnel and on the safety and enjoyment of the roads by other road users.	Infrastructure – road use	High Negative	Moderate negative
The perceived job opportunities offered by the Project will lead to further inward migration of work seekers to Erongo Region.	Inward migration	High negative	High negative
The lack of a formal and appropriate public consultation and engagement strategy could impact negatively on the company, its communities of interest and on potential partnerships between them.	Stakeholder Engagement	Moderate negative	High positive
A lack of sound, comprehensive and clear workplace policies could impact on the well-being of LHU's employees, workplace relations and the company's reputation for good governance.	Workplace	Moderate negative	Moderate positive
A commitment to strategic corporate social investment which promotes community development will reflect positively on LHU's reputation for good corporate governance and citizenship, and will provide benefits for LHU's communities of interest and for development in Namibia.	Community Development	Moderate positive	High positive
The Project will impact on the enjoyment of the NNP by tourists and will decrease the value of the park as a source of tourist income, job creation and livelihood opportunities.	Tourism	Moderate negative	Moderate negative

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APPENDIX N: ECONOMIC STUDY

Metago Strategy4Good
Strategy and Sustainability
Consultants

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Langer Heinrich Uranium Economic Impact Assessment

Date: June 2009

Contact:
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NAD
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BACKGROUND

PROJECT DESCRIPTION

Topic	*Information*
Name of business unit	Langer Heinrich Uranium
Shareholding	100% owned by PALADIN ENERGY LTD (Inc in Australia)
Name of mine	Langer Heinrich Uranium
Address of mine	Head Office is in Swakopmund
Location of mine	The Langer Heinrich deposit is situated at the eastern edge of the arid Namib Desert within the most northerly part of the Namib-Naukluft National Park, in the Erongo Region in Namibia.
Commodity	Uranium
Life of mine	25 years
Number of employees	After phase III completion, 450-480permanent employees.

Discovered in 1973, the deposit was the subject of numerous project evaluation researches, including a comprehensive pre-feasibility study. Depressed uranium prices at the time curtailed any development activity and the deposit changed hands several times. Paladin Resources acquired the mineral title in 2002 and in 2005 finalised a favourable bankable feasibility study. The defined mineral reserves provided a mine life of 11 years and a process plant life of 15 years.

Langer Heinrich Uranium (Pty) Ltd (LHU), a wholly owned subsidiary of Paladin Energy Ltd, owns and operates under the approvals of a mining licence (ML 140), an environmental impact assessment (EIA) and an environmental management plan (EMP).

Background to the expansion and notes on current CSR is in the fact sheet provided by LHU.

LANGER HEINRICH OPERATION: UPDATED FACT SHEET - JUNE 9, 2009

- Production capacity increased by 40% as of July 1, 2009 to 3,700,000 lbs of yellowcake per annum.
- Capital cost of expansion (stage 2): $NAD 440 Million
- Employment numbers approx 450 persons, 95% Namibians
- Employment of non-Africans: 5 of 450
- Paladin share option plan is unique to Namibia, where every long term LHU employee receives share options (average of 5,000 share options per person in 2008) and thus

participates in Company ownership.

- Donated $NAD 10,000,000 to Roads Authority over past 3 years to upgrade and seal C28. This reduces maintenance requirement for Roads Authority on C28 allowing maintenance dollars to be spent on roads such as in the North where heavy expenditures are required.
- Donated $NAD 190,000 to Educational Math Congress in May 09 for Namibian Teachers to be trained in latest Math teaching methods.
- Supplied an interest free loan of $NAD 1,200,000 to the Swakopmund Medical Centre to purchase lab equipment.
- Built Computer centre in Mondesa for children enrolled in Mondesa Youth Opportunities
- Involved at the community level with many events; LHU believes that events where LHU employees can participate with the community add the most value per contribution.
- Paladin initiated operations in Malawi in April 09 (Kayelekera Mine)
- Several Namibians (to date 12 and growing) working as expats in Malawi, employees live in the Erongo region but are flown to Malawi on a 6 week in, 2 week out Roster.
- General Manager of Malawi's Kayelekera Mine is Namibian.
- Senior Management level at Langer Heinrich consists primarily of Namibians, two of which are enrolled in Executive Development Program at Stellenbosch University to prepare for potential General Manager position. The current positions for these individuals are Martin Tjipita (Engineering Manager) and Rodney Theron (Processing Manager).
- Paladin Energy is extremely positive regarding the mine life at Langer Heinrich and believes that a thirty year life is realistic.
- Whole heartedly, Langer Heinrich continues to work hard in the area of community involvement, as evidenced by the Construction activities of the Stage 2 $NAD 440 Million expansion where local Contractors performed the majority of the work.
- A 3rd expansion is planned for early 2010 for an estimated Capital cost of $NAD 800 Million.
- Currently involved with the preparation of a 2nd Environmental Impact Assessment (EIA) for LHU to determine any gaps in the initial EIA and to include any potential impacts from expansions.
- All significant Environmental issues are reviewed by World class experts including many Namibian expert scientists and consultants.

LHU proposes to expand its current operations at the mine in order to increase the uranium oxide production from 3.7 million pounds per annum to between 5 and 10 million pounds per annum. The promoters' motivation for the project is economic in nature as LHU has identified an

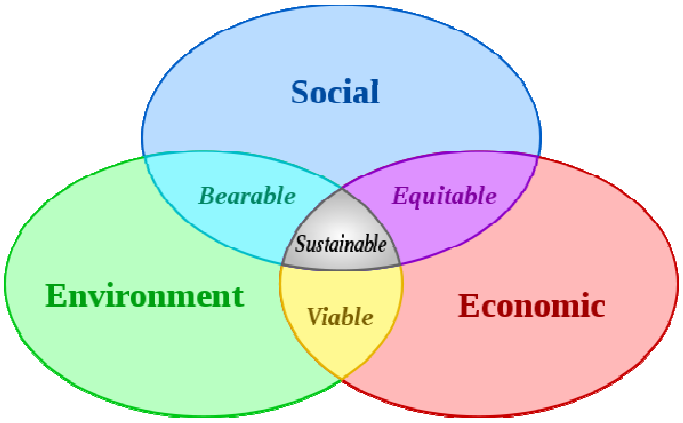
opportunity to increase its supply in line with a growing global demand for uranium used in power generation. The main components of the expansion project include: Upgrade to the processing plant, increased rate of mining, satellite mine workshop, satellite crushing plant, heap leach pad, tailings thickener, provision of additional pumps, and power (either generators or a power line) to the swakop river for abstracting the full allotment of groundwater and temporary contractors camp.

CONCEPTUAL FRAMEWORK

DIFFERENT SHADES OF SUSTAINABILITY

In a modern society, all economic development is not necessarily good. This notion is borne out of the concept of sustainable development which dictates a balance between economics, social and environmental responsibilities. The philosophical (for many people real) debate regarding the balance between economic, social and environmental responsibilities, often plays out in the concepts of weak, moderate and strong sustainability.

Weak sustainability is based on the assumption that the overall stock of natural and human capital remains constant all the time. It allows for infinite substitution between the capitals, thus implying that the decrease in natural capital can be made up by innovation, ingenuity, imagination, and adaptation. Moderate is similar to Weak Sustainability, except that critical aspects of life, such as the ozone layer and coral reefs are protected, while the rest of environmental resources are still seen to be no more than natural capital and are allowed for substitution with other forms of capital.



Strong sustainability – the ecological approach - states that when an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if cause-effect relationship is not fully established scientifically. In this context, it implies that use of any natural resources should be compensated for by means of reforestation, recycling, reduced inequality, community development and others. Strong sustainability demands that equivalent stock of natural capital is preserved for future generation.

As with most Environmental Impact Assessments in SA, our approach to sustainability is in the Moderate Sustainability category - thus as long as there are no social, environmental and economic "fatal flaws", the positive economic impacts can be used to mitigate against harmful social and environmental impacts. (A fatal flaw would be an event where irreparable bio-physical or social destruction would result due to an economic activity).

The Economic Impacts of LHU below, which are mostly positive, should be read in conjunction

with the other specialists reports on its social and environmental impacts. Negative impacts, before and after mitigation, should be juxtaposed against the positive economic ones in this report as this would be in alignment with a moderate sustainability approach.

PURPOSE OF ECONOMIC IMPACT ASSESSEMENTS

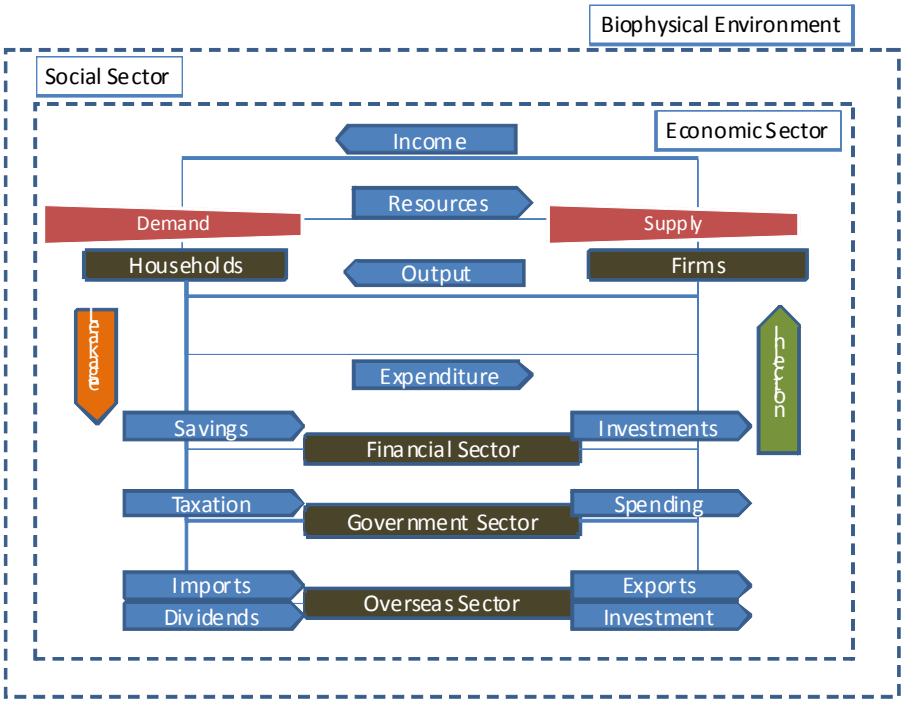
The IAIA[1] defines an impact assessment as "...simply defined, it is the process of identifying the future consequences of a current or proposed action." In an economic sense, this implies understanding the impacts on the macro-economic environment, thus stating which parts of an economy will grow, stay the same or decline and why.

We state a few generic principles which underpin our findings:

- Economic growth is a function of societal stability and confidence in a country's future. We assumed these factors will be stable for the duration of the mining project.
- We assume that LHU has competent management that will be able to manage the inherent risks and opportunities in their business and that they will enable the business to deliver the benefits stated in this report.
- That sustainable economic growth comes from optimal population growth, productivity and technological advances, which is mostly led by investment, private consumption expenditure and exports (thus the private sector is the real engine for growth);
- The role of the Government Sector is to lay down the rules of the economy and act as a benevolent body to distribute wealth and opportunities to the poorer sections of the economy.
- That sound monetary and economic policies are essential for economic growth and is assumed to be the case in this Economic Impact Assessment.
- That economics is subject to the overall ecology, but that such trade-offs are beyond the scope of this report.

[1] International Impact Assessment Association

FLOW OF GOODS, SERVICES AND INCOME



The following section is merely for information for a non-economics reader and endeavours to show in a simplistic format the flow of goods, services and money in an economy. An economic impact assessment traces spending through an economy and measures the cumulative effects of that spending. The impact region is determined by the nature of the project and can be the entire country, province, an individual municipality or a combination of municipalities. The diagram above shows in a simplistic manner how one can trace spending through the interconnectedness of goods, services, income, households, firms, government, banks and the international sectors. This diagram demonstrates how an increase in output from LHU has an impact on the overall economy of Namibia. The flow of the argument is the following:

1. An investment occurs in LHU, from either households (private investment), the banking sector (loans) or from the overseas sector (foreign investment).

2. The investment results in sustainable (over the life of mine) increases in output, which leads to increases in employment, sales (in this case exports) and increases in procurement from suppliers (more procurement from other firms.)

3. Through direct and indirect taxes, the Government Sector increases its income and capacity to spend.

4. Profits are saved (or paid out as dividends) into the banking sector, which creates further capital for lending. A dividend that leaves Namibia is considered a leakage.

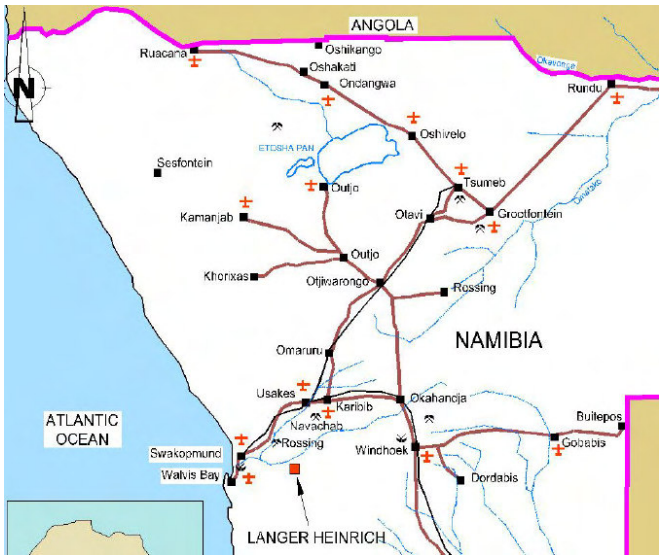


FIGURE 1: MAP OF PROJECT AREA

ECONOMIC BASELINE INFORMATION

REGIONAL IMPACTS

This economic impact assessment is being conducted in the main on the Namibian Economy, but with strong references to the Erongo region in which the project is located. This is due to the fact that regional macro economic data is not readily available and hence the national economic accounts have to be used as the basis for the impacts comparison.

ERONGO

From the Regional Council of Erongo we learn that Erongo is Namibia's six largest region and is ranked 8th in population size. The region with its relatively small population of 107 663, extends over a vast surface area of 63720 km^2. This Region is named after the Erongo Mountains, a well known landmark in Namibia and in this area. All the main centres within this Region are connected by tarred roads. The region's road network connects Walvis Bay corridor via the Trans-Caprivi to Zambia, Zimbabwe and further into Southern African regions, and through Botswana to the Gauteng Province. The harbour at Walvis Bay is one of the key economic features in the region. The Walvis Bay port recorded positive growths during recent years. The facilities at the harbour appear reasonably well geared towards higher trade flows in the Walvis corridor route. Railways connections exist between Walvis Bay, Otjiwarongo and Windhoek and form a vital component in the industrial infrastructure.

Fishing and fish processing are an important economic activity in Erongo, not only in terms of production but more importantly in providing incomes to the region's skills and semi-skilled workers. The Rossing Uranium, LHU, Navachap Gold, and the Coastal Salt Operations are the significant mining operations in the Erongo Region. The recent opening of more uranium mines in the area has brought more life to the town of Arandis and the region as such. Mining of semi precious stones and minerals specimens generally brings in only small revenues mainly to erratic distribution of the mineralization and the lack of organization among small miners for marketing purposes.

Farming in the Erongo Region is extensive and it's mostly concerned with small stock and, on much a smaller scale with domesticated ostriches and game. (Major vegetation types comprise karoo, affinities in the southern and central Namib.)

It needs to be added that Erongo has a strong, yet seasonal tourism sector.

The Erongo Region forms an important link between two important destinations namely the Etosha National Park and the some of the World's Largest Dunes. An ever increasing volume of tourism through the area is observed.

The Region comprises of seven constituencies: Omaruru, Karibib, Arandis, Swakopmund, Walvis Bay Rural, Walvis Bay Urban and Daures. The town of Swakopmund serves as the seat of the region.

PROJECT DESIRABILITY

The promoters of the project state that *the motivation for the project is economic in nature. LHU has identified an opportunity to increase its supply in line with a growing global demand for uranium that will be used in power generation. The project will benefit society and the surrounding communities both directly and indirectly. Direct economic benefits will be derived from wages, taxes and profits. Indirect economic benefits will be derived from the procurement of goods and services and the increased spending power of additional employees. The challenge facing LHU is to contribute these benefits while at the same time preventing and/or mitigating potential negative social and environmental impacts.*

In a broader ecological sense, the desirability of the project has two arguments, one that says nuclear power is good for the environment and hence uranium is very necessary due to emissions reductions compared to conventional power stations, and the other that says that nuclear power plants pose high risks for society. According to the UN Intergovernmental Panel on Climate Change (IPCC), a 50-80% reduction in all emissions is required to stabilise the carbon dioxide concentration in the atmosphere at present levels. When substituting coal-generated energy with nuclear energy, for every 22 tons of uranium used, one million tons less of carbon dioxide are emitted and hence considerable reductions in carbon emissions is a certainty.

We are unfortunately not in a position to take a stand on the desirability of this raw material as it requires considerable scientific and engineering knowledge, both of which we do not have for this type of evaluation. However, the debate on the desirability of uranium cannot go un-mentioned and hence the stating of this issue.

From a strict economic point of view, based on our analysis below, there can be no doubt that the net economic benefits of this development far outstrips any potential economic cost, and hence it can be argued that economically the project is desirable.

PROJECT VIABILITY

A ROSY URANIUM COMMODITY OUTLOOK

From most sources it appears that the Uranium-nuclear energy future may be a very attractive industry going forward. Since 1985, demand has exceeded production. Mines in 2005 supplied some 49,000 tonnes of uranium oxide concentrate, increasing progressively to 53,070 in 2007. However, demand for uranium was 83,000 tons in 2007. Mines thus met 64% of demand in 2007, with the balance coming from secondary sources such as dismantled warheads; government and civilian stockpiles of uranium and plutonium; recycled uranium and plutonium from spent fuel, as mixed oxide fuel; and re-enriched depleted uranium tails.

The Rossing mine in Namibia produced 6,7 m pounds of Uranium in 2004, with a value of less than US$ 100 million per year. The mine has a Uranium concentration of 0.03% by weight. In comparison, this year, LHU is planning to produce 3,7 m pounds.

A total of 26 countries generate more than 25% of their electricity using nuclear power plants. As of early 2008, some 440 nuclear reactors were operating worldwide, with a combined capacity of some 363 GWe[2]. These reactors require 173m pounds of uranium oxide concentrate containing 66,500 tonnes of uranium annually. The cost of mining Uranium is a very small factor in the cost of running a nuclear power station.

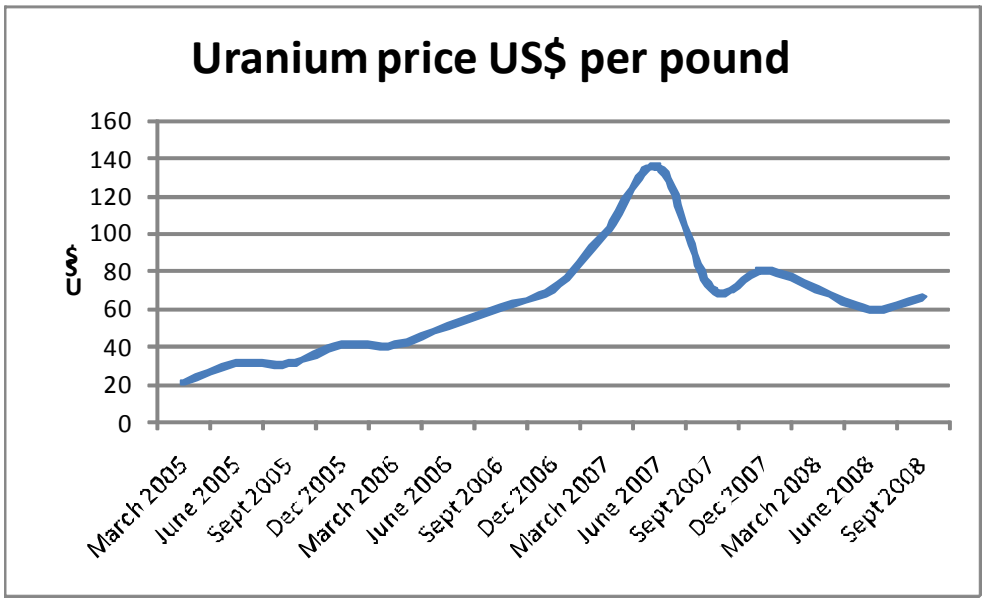
Because of the cost structure of nuclear power generation, with high capital and low fuel costs, the demand for uranium fuel is much more predictable than with probably any other mineral commodity. Once reactors are built, it is very cost-effective to keep them running at high capacity and for utilities to make any adjustments to load trends by cutting back on fossil fuel use. Demand forecasts for uranium thus depend largely on installed and operable capacity, regardless of economic fluctuations. Demand will depend on new plants being built and the rate at which older plants are retired. Licensing of plant lifetime extensions and the economic attractiveness of continued operation of older reactors are critical factors in the medium-term uranium market.

By 2025, world nuclear energy capacity is expected to grow to between 450 GWe and 530 GWe from the present generating capacity of about 370 GWe. This will raise annual uranium requirements to between 80,000 tonnes and 100,000 tonnes.

[2] In the electric power industry, *megawatt electrical* (abbreviation: MWe) is a term that refers to electric power.

URANIUM PRICES REMAIN RELATIVELY HIGH

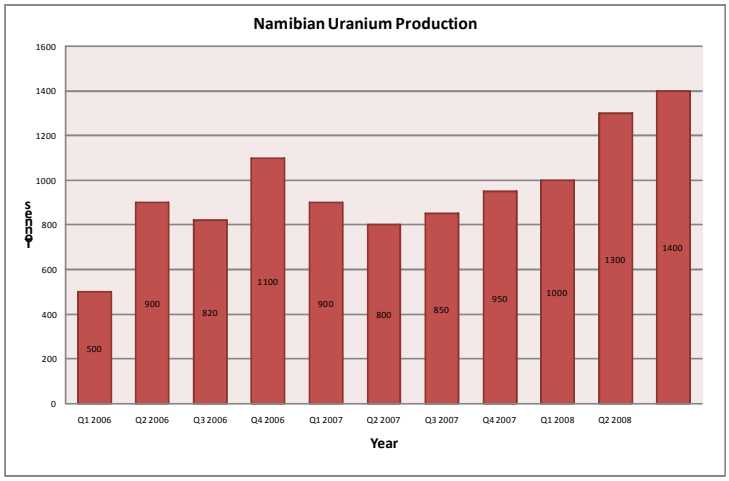
FIGURE 2: URANIUM PRICES



Uranium prices were high in the late 1970s thanks to many nuclear power plants being built, but as the public became disillusioned with nuclear power in the 1990's, prices plummeted to US$ 22 / kg. In 1996 prices recovered to the point where most mines could produce profitably, though they then declined again and only started to recover strongly late in 2003. The price of Uranium then rose to a peak of over US$ 300/kg in 2007 and came back to US$ 165 / kg by early 2008. The rise in prices has led to a flurry of exploration and a 50% increase in reserves.

There has been a boom in uranium exploration, owing to high oil and uranium prices and possibilities of disruption in energy supplies to Europe and North America. Worldwide exploration expenditures in 2004 totalled over US$ 130 million; increases of almost 40% compared to 2002, and were close to US$ 200 million in 2005. This can be expected to lead to further additions to the uranium resource base. A significant number of new mining projects have also been announced that could substantially boost the world´s uranium production capacity.

Given the above strong and stable demand for Uranium, and the relatively higher price environment, on balance, one has to assert that this industry has an attractive outlook.

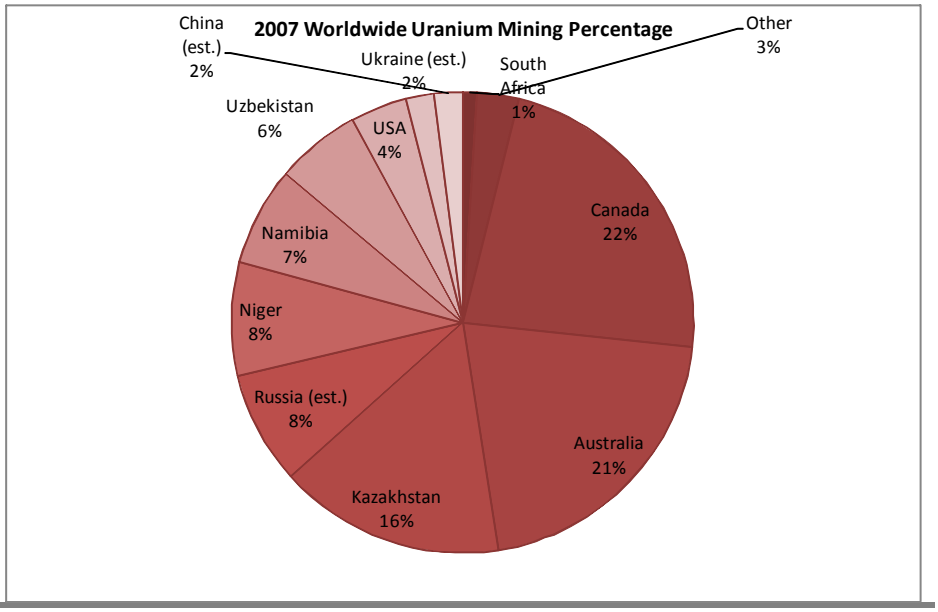


NAMIBIA'S ROLE WITHIN THE GLOBAL URANIUM MARKET

Although Namibia is an important producer of uranium it does not have any nuclear power stations. The Government of Namibia has indicated recently that nuclear power stations must be considered as an option to resolve the electricity crisis within the region. In 2006 Namibia has produced 3,617 tonnes (9.69 million pounds) of uranium with only Rössing Uranium Mine active at that stage, with a production contribution equivalent to 7.8% of global production. Since then the Langer Heinrich mine has become operational. In 2007 Rössing Uranium mine planned to produce 4,049tonnes (10.85 million pounds) of uranium, a 1.3% annual increase in production. LHU mine also started producing in 2007, but did not reach full production capacities of 1,200 tonnes of uranium, only reaching 1,000 tonnes (2.68 million pounds) of uranium. These amounts totalled Namibia's uranium production for 2007 at 5,049tonnes (13.53 million pounds), a 65% increase from 2006.

Based on the current projections and results of exploration companies in Namibia, the annual production level may increase to more than 19,000tonnes (50.91 million pounds) by 2012, resulting in 376% growth rate from 2007 to 2012.

The pie chart indicates that Namibia held 7% of the world's uranium reserves. This has increased to approximately 10% (2009).



HIGH EMPLOYMENT AND RELATIVE POVERTY

The following section provides some baseline information on employment and poverty in Namibia and Erongo.

- The Namibian population was estimated at 1.8 million people in 2005, of which 107k (5.9%) lived in Erongo. This is in fact a very small population and hence a large economy is never really possible. Population, productivity and innovation growth are the major drivers of economic growth and with a small population (GDP = Population x GDP per capita), a massively big economy is not likely in Erongo. (We estimate the Erongo economy to be between N$ 7- 10 billion (Namibia was N$ 70 billion in 2008). To put this into context, the Namibian Economy is approximately the size of Limpopo Provincial Economy, which is the second smallest provincial economy out of nine provincial economies in South Africa.

- The annual growth rate in population for Erongo is set at 1.3% (Namibian National Planning Commission), which was half of the Namibian growth rate of 2.6%.

- The Association of Regional Councils on Namibia make the following valid points with respect to employment creation in the Erongo Region:

    - The unemployment rate in the Erongo Region is 36% (inclusive of the so-called economically non-active population – thus people not seeking jobs). There are significant differences between males and females. The proportion of employed females is 58 per cent compared to 72 per cent for males.

Why is unemployment high in Namibia?

There is abundant evidence to prove empirically and theoretically that unemployment rate is high in Namibia. ***The recent statistics show that unemployment rate had reached 37 percent.*** Namibia's unemployment rate is the highest in the SACU member states with Swaziland trailing behind by 30 percent. Combining the underemployment statistics, our total unemployment could exceed 60%. According to a well published Afrobarometer survey, over half of the people surveyed in Namibia say that unemployment is the most important economic problem.

SA Regional Poverty Network

The most recent Namibian Labour Survey at our disposal (2004) shows the results below. Note that these numbers will yield slightly different unemployment percentages as they are from different sources.

Region/ Area	Sex	Employed	Unemployed	Labour force	Inactive	Activity not reported	Total
Erongo	*B*	37 701	13 192	50 893	12 433	0	63 326
	F	14 078	6 451	20 529	7 727	0	28 256
	M	23 623	6 741	30 364	4 706	0	35 070
				0			0
Namibia	***B***	**385 329**	**108 119**	**493 448**	**393 880**	**1 020**	**888 348**
	F	**168 677**	**56 125**	**224 802**	**241 237**	**373**	**466 412**
	M	**216 652**	**51 994**	**268 646**	**152 643**	**647**	**421 936**

- In Erongo, the largest occupational group is elementary occupations that include labourers and other unskilled occupations and constitutes 28 per cent of all employed persons. There are no significant differences in terms of male and female numbers. The second largest occupational group is craft and related trade workers, making up 19 per cent of all employed persons in the region. Males make up 90 per cent of those in this occupational group. Professionals together with associate professionals make up 12 per cent of all employed persons with no significant gender differences in this group. Other occupations that are predominantly male-dominated are the armed forces, skilled agricultural and fishery workers and plant and machine operators and assemblers. The clerk's occupational category is female-dominated with about 15 per cent of all employed females falling in this category.
- One out of five employed persons over 15 years of age did not complete primary education, while slightly more than two out of five did complete primary education. Almost 30 per cent of all employed persons have completed secondary or tertiary education. Significant gender differences occur.

Turning to Namibia in total, in the graph below, it can be gleaned that a large section of employees work in the agricultural and Government sectors. The mining sector, based in these statistics, has only 1.6 % of the workforce employed, which is a very small percentage indeed. The "tourism" sector, which is not an economically classifiable sector as its income is dispersed over a number of economic sectors, is most readily traced to the hotels and restaurants sector, which employs approximately 3% of the employed. Of these total jobs, all of it will not be dependent on tourism, as many of the jobs are related to local business and private consumption expenditure.

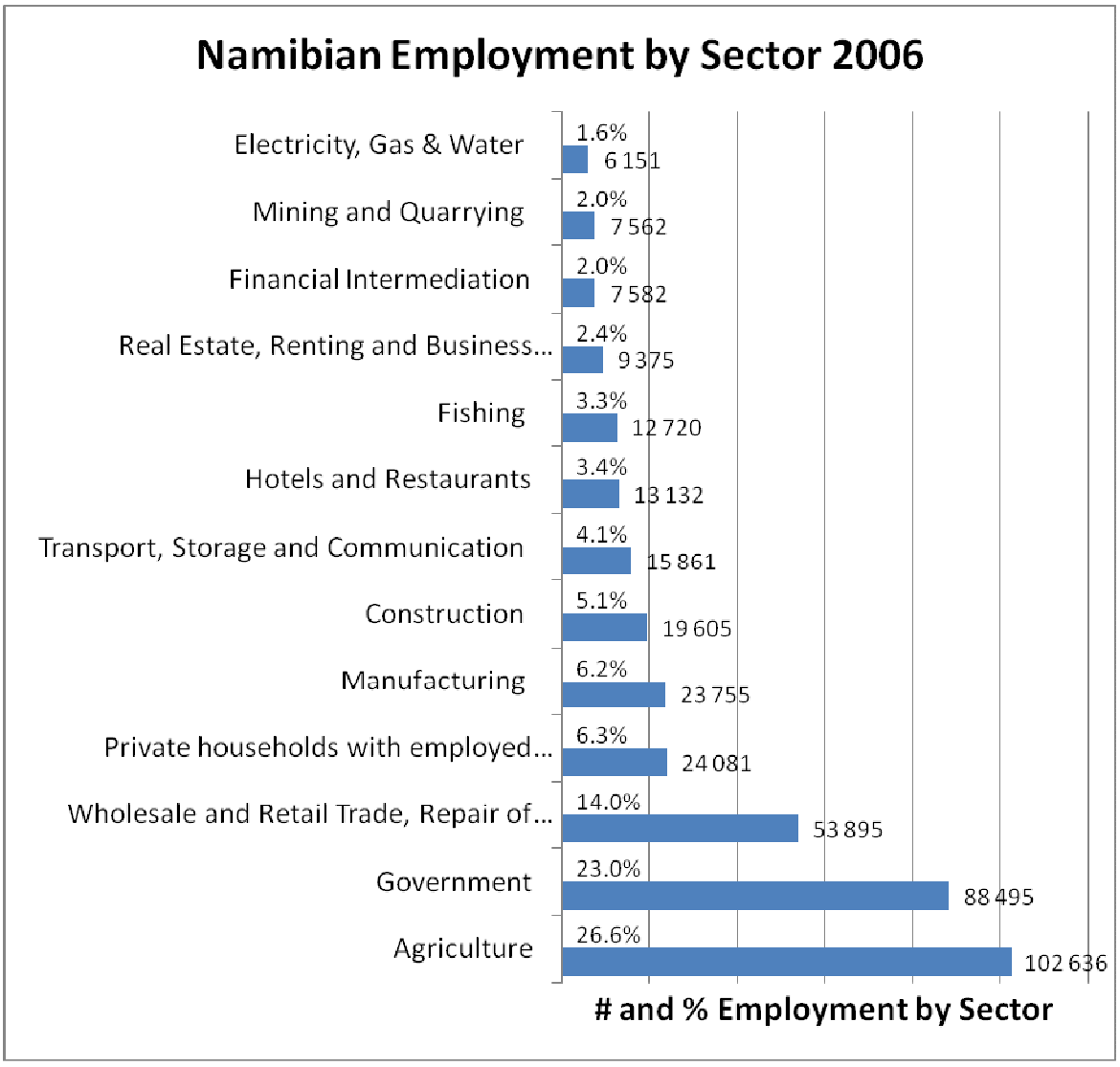
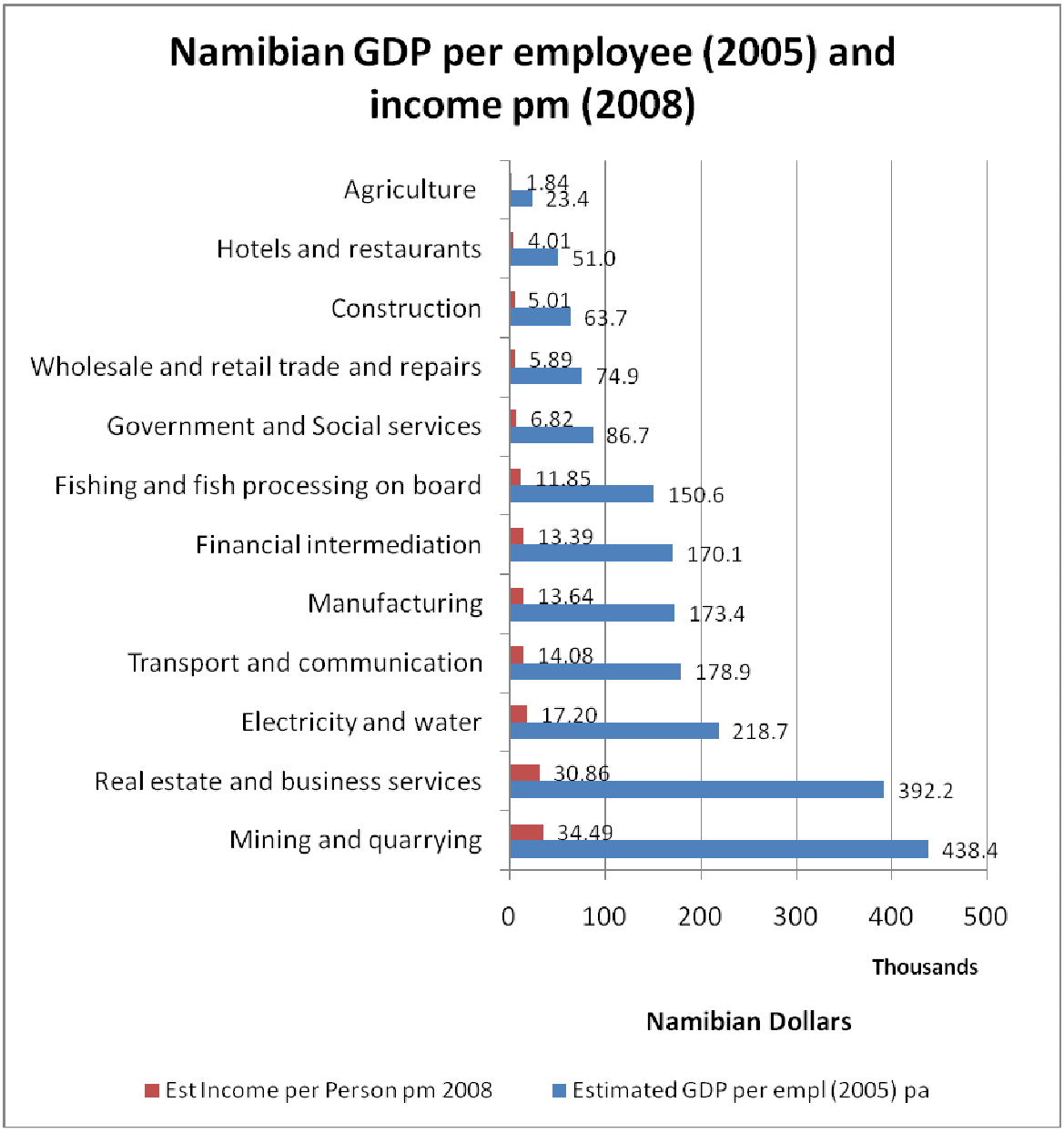


Figure 3: Source: Institute for Public Policy Research Namibia

A further important factor about employment is not only the amount of jobs that are created, but also the GDP per employee, which indicates the level of total income derived in the economy per employee. In addition it also shows the relative capital intensity (investment required to create one job) and the degree of skilled labour required to perform in an industry. From the graph below, it can be seen that agriculture and hotels and restaurants (the latter part of tourism sector), have relatively low earnings per person (estimated at N$ 1840 pm to the mining sector where the income is N$ 34 490 pm).

FIGURE 4: SOURCE: INSTITUTE FOR PUBLIC POLICY RESEARCH NAMIBIA



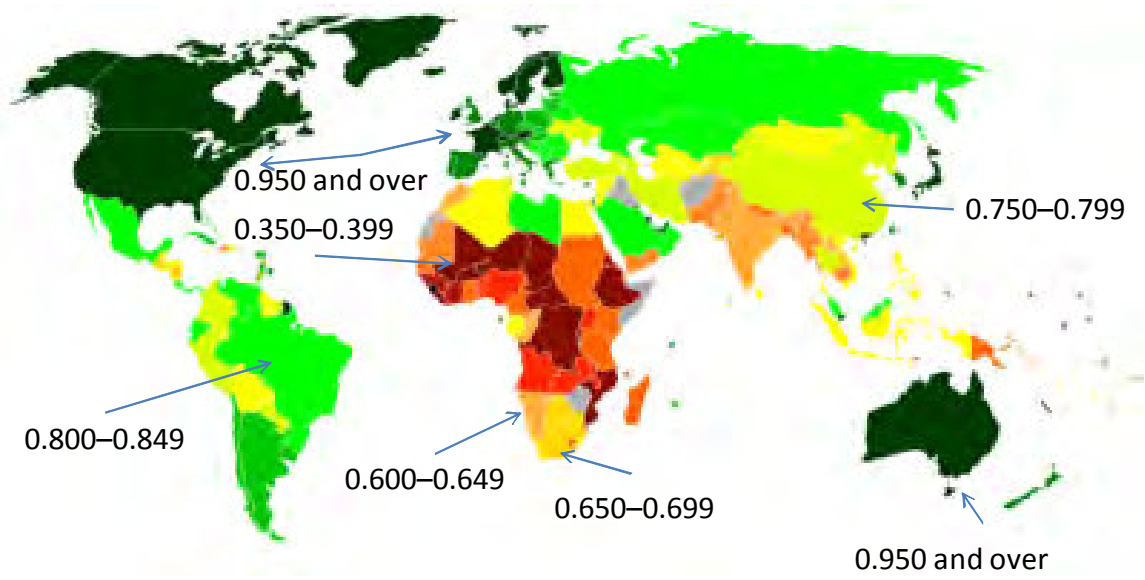
- In Erongo, due to the arid climate, 80% of the population live in the urban areas (as these have basic services and water), compared to 33% of all Namibians living in urban areas. This means by implication that economic development opportunities in large areas of Erongo are limited, **hence the existing and potential contributions from the Mining and Tourism Sectors are crucial for economic development in the area.** These two sectors in effect use and compete for the land available in the area (although it needs to point out that at 63k km^2, there is no lack of land availability).

- Erongo has a relatively high literacy rate (92%) compared to the Namibian average of 81%, which means its workforce are slightly better educated than the average Namibian.

- The migration patterns into Erongo is also interesting, with 55% of the population having migrated into the region on a life-time basis and 8% on a short term basis (thus indicating that the region provides jobs). These are much higher than the Namibian averages (3,8% and 4% respectively). This corroborate to a large extent the strong harbour, tourism and mining growth nature in the region, as these are likely to be the major economic growth drivers in the region.

NAMIBIAN AND ERONGO PROVERTY PROFILE

The well-known Human Development Index[3] map of the world below shows the relative development nature of different countries and regions across the world. From this map, Namibia can be categorised as a developing country (alongside with South African and India for example). The dark green colours show very developed countries (USA, Europe and Australia), whilst the dark brown ones are very under-developed. Relative to dark green, the lighter greens and yellows are less developed. Erongo itself, has a HDI of 0.71, indicating a relatively better development status than the average for Namibia. The index of 0.35-0.399 below shows countries (mainly in Africa) that are severely under-developed.)



The HDI perhaps summarises the development status of Namibia very well, that of a developing economy on average and much like South Africa**, a country with two economies**. On the one hand, a very sophisticated first world economy lives alongside very poor neighbours, hence the existence of high income inequalities. The following observations on the poverty profile of Namibia suffice:

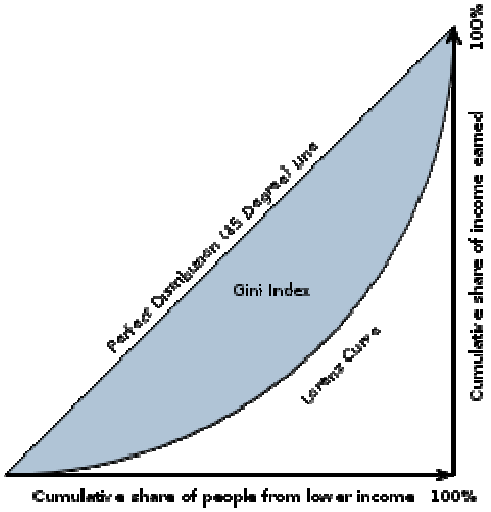
- Erongo and Namibia has gini-coefficients of 0.60 and 0.67 respectively, which indicate a relatively high income inequality. Perfect Income Equality is zero and Perfect Income

[3] The HDI combines normalised measures of life expectancy, literacy, educational attainment, and GDP for countries worldwide. It is claimed as a standard means of measuring human development—a concept that, according to the United Nations Development Program (UNDP), refers to the process of widening the options of persons, giving them greater opportunities for education, health care, income, employment, etc. The basic use of HDI is to measure a country's development.

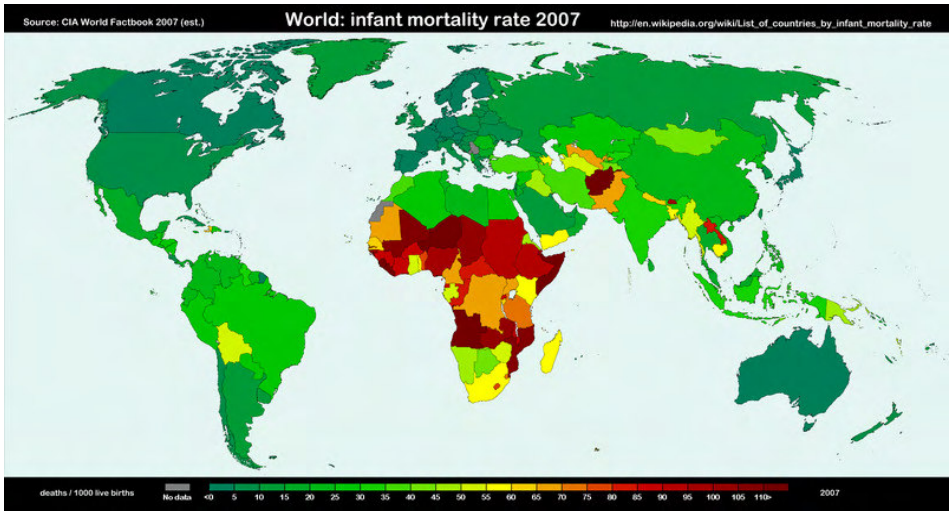
Inequality is one.

- The dependency ratio for Erongo (Population / formally employed) is relatively low at 2.9, compared to the 4.8 for the whole of Namibia. Very deprived areas in rural Africa are often as high as nine dependents.

- The official unemployment rate is a further indicator of poverty, and the Erongo's unemployed of 25% (this is the strict definition as opposed to our estimate above of 34%) compare less favourably to the Namibian average rate of 21%, both of which are much worse than the average unemployment rate of 7% for developed economies.



- Infant deaths per 1000 live births for Erongo is 42 and for Namibia it is 52, which is better than the SA average of 56, but on the whole a far cry away from the 0-5 for highly developed countries.



- Furthermore, life expectancy at birth is 56 years for Erongo and a low 49 for Namibia as a whole. This again compares unfavourably with developed nations of over 70 years of life expectancy.

- The prevalence of HIV/Aids in pregnant women aged 15–49 years, was 27% and 19.8% for Erongo and Namibia respectively. The Erongo percentage is high indeed and on the face of it, does not explain why people in Erongo have a higher life expectancy than the average Namibian.

- The extremely poor and generally poor (thus people living on, below or just above the breadline), are 26.8% and 37.8% respectively for Erongo and Namibia. This indicates a

relatively high proportion of poor people in Namibia.

LIVELIHOODS

Wages and salaries constitute the main source of household income for 67% per cent of the total population in the Erongo Region, while farming (mainly livestock) is the main source of income for only 4 per cent of households (This is no surprise given the arid land). Significant differences occur between urban and rural areas. In urban areas wages and salaries constitute the major source of income for 73 per cent and in rural areas for 41 per cent of households. Farming is reported as the main source of income for only 16 per cent of rural households. Interesting to note that pension is the main source of income for more than 26 per cent of households in the Daures constituency, while farming is the main source of income for 24 per cent of these households. In all the other constituencies, salaries and wages are far more important and farming far less important as main sources of income for households.

Area	Households	Per cent				
		Farming	Business	Wages and Salaries	Pension	Cash Remittances
Erongo	27 496	3.9	7.9	66.6	9.6	8.0
Urban	22 036	0.8	8.0	73.0	7.6	6.4
Rural	5 460	16.4	7.5	40.6	17.6	14.3
Arandis	1 906	0.9	7.1	64.7	14.5	8.9
Daures	2 364	23.6	7.8	23.2	26.4	15.5
Karibib	2 966	8.8	7.3	48.6	15.4	14.0
Omaruru	1 837	5.7	9.5	62.4	10.5	8.0
Swakopmund	7 526	0.7	8.6	72.6	7.9	6.5
Walvis Bay Rural	4 426	0.7	7.6	77.5	2.4	7.5
Walvis Bay Urban	6 471	0.8	7.3	77.8	6.0	4.2

CONCLUSION ON EMPLOYMENT AND POVERTY

We can conclude the following baseline for the purposes of the Economic Impact Assessment:

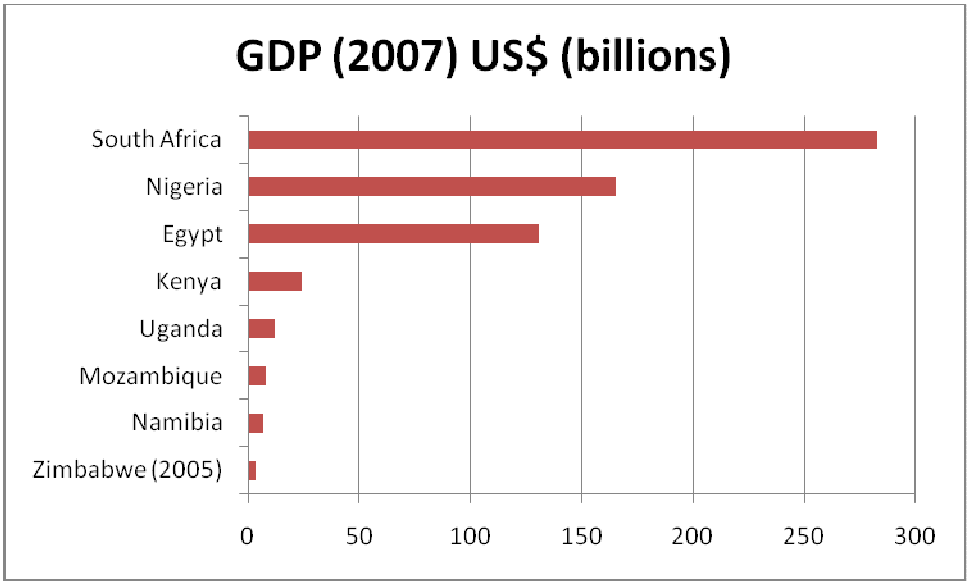
- As a developing economy, Namibia, like so many other countries in Africa, has a high unemployment and poverty rate and that its general HDI is relatively low. However, its poverty rate is not desperate as in many truly poor African countries.
- Employment is mainly in low skilled and basic economic sectors (agriculture, government and business services).
- Very little employment is in the manufacturing sector, a sector renowned for its innovation or cheap labour requirements; which is the mainstay for high growth and developed economies.
- Job creation, skills development and economic growth is thus important to this economy (over and above the economic business recession) as one could postulate that structural

unemployment (thus the mismatch between skills supplied and demand), is of the order of the day.

RELATIVELY SMALL ECONOMY

The size of a country's GDP matters because the bigger it is, the better its ability to absorb shocks and the less volatile its GDP is. The official Namibian GDP[4] at end of 2007 (in current prices) was set at N$61.4 billion and in 2008, it was just over N$ 70.0 billion, which is relatively small. From the graph below this can be seen.

FIGURE 5: GDP (2007) US$ (BILLIONS)



ECONOMIC GROWTH VARIABLE

A typical consequence of a small economy is often its variability in growth rates and this is borne out in the table below. The Real GDP growth rate is as high as 12.3% to as low as 2.5% over a five year period. The GDP per capita has also grown positively which means the average Namibian has increased his or her wealth. This baseline will be used later to demonstrate the impact that LHU will have in economic growth.

TABLE 1: NAMIBIAN GDP GROWTH

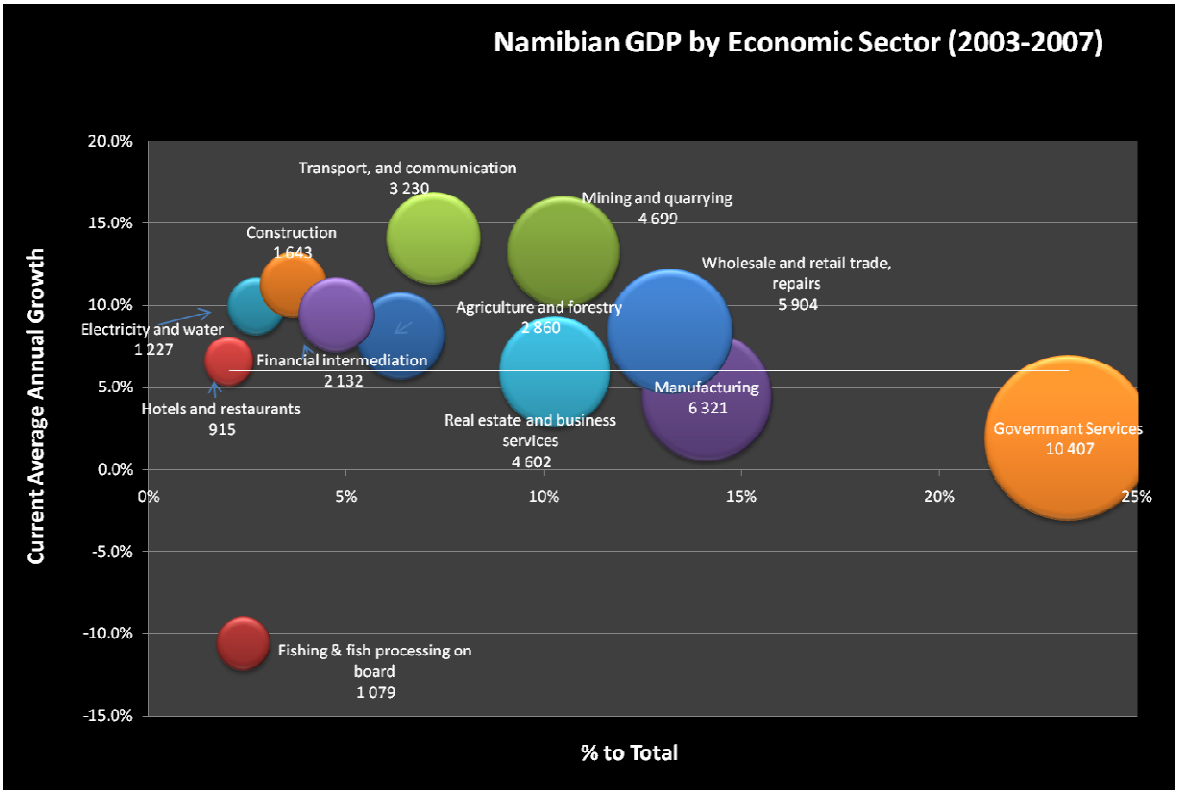
Constant 2004 prices	2003	2004	2005	2006	2007
GDP (N$ mil.)	38014	42679	43758	46886	48789
% Change	4.2	12.3	2.5	7.1	4.1
GDP per capita (N$)	20103	22194	22360	23537	24058

[4] Dec 2008 Quarterly Bulletin Bank of Namibia

% Change	2.5	10.4	0.7	5.3	2.2

PRIVATE SECTOR GROWING IN THE ECONOMY

Figure 6: GDP BY ECONOMIC ACTIVITY

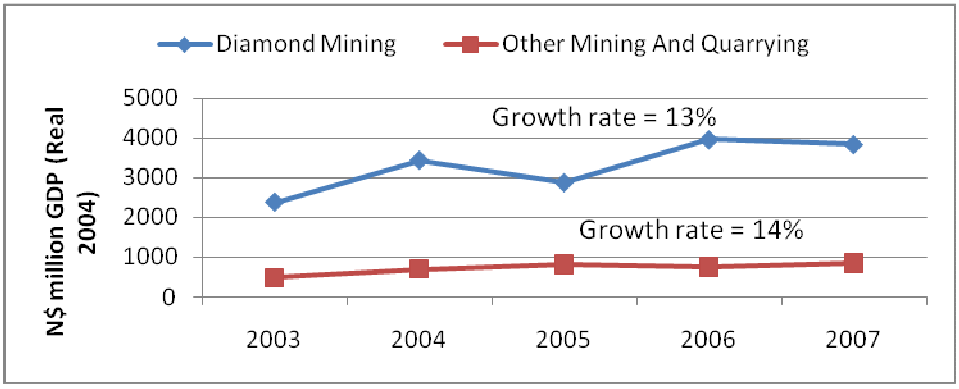


From the above graph, the following is evident:

- Government Services provision is the largest part of the economy, at almost 25% of total economic sector output. This is not an uncommon economic phenomenon as a similar profile for many regions in South Africa exist. However, it is pleasing to observe that the private sector in Namibia is thriving as all the major entrepreneurial and high risk sectors show strong growth. Relative to the private sector, Government is not growing any larger and this is a sign of the basis for a sustainable economy.

- The sectors that have been growing strongly were the mining and quarrying and transport and telecommunications sectors (particularly the telecommunications sector). Diamond mining still dominates the mining sector and other commodities are slowly increasing in size (especially Uranium Production.)

FIGURE 7: DIAMOND AND OTHER MINING OUTPUT



- The mining sector is relatively big at 12% of total GDP, which is bigger than the South African mining industry's contribution to its GDP. As will be discussed later, the mining industry is responsible for a significant amount of the Namibian exports and foreign earnings, which means that declines in the commodity cycles have a major impact on the country's economy.

- The decline of the fishing industry (another non-renewable resource such as mining), shows how the decline in resources can have a big impact on an economy. This industry's decline in current terms was over 10% year on year.

- The Namibian economy can be described as a primary and government sector driven economy, as almost 45% of the country's GGP come from these sectors. Economies with these profiles are often not very competitive, as real economic growth depends on innovation in the manufacturing sector, of which Namibia have little of.

TOURISM SIGNIFICANT IN ERONGO

One of the key concerns from many stakeholders during the EIA public participation processes, was the issue around the cumulative impact mining may have on tourism. This concern is prominent in most mining development, as mining often crowds out other land uses, such as agriculture and parks/landscapes for tourism. It's very difficult it not impossible to put an aesthetic use value to land, some may argue that it's priceless, others may say it's a necessary compromise for economic development or poverty alleviation. No primary research was undertaken to quantify or qualify the impacts, but a number of statistics based on reliable statistical sources reveal some interesting information.

In the first place, how large is the tourism industry in Namibia? Purely from the economic sectoral data, such an answer is not easy to give, as a tourist spend his or her money in different sectors, of which the hotels, restaurants, retail, transport and financial services sectors are the most significant. All these sectors have obvious backward and forward linkages, so the multiplier is equally at play in this sector as in any other.

Namibia is famed for its Tourism in the Erongo area given the singularly beauty of the Namibian arid landscapes and the Nauklauft Park plays a critical part in preserving this. Given that a number of exploration licenses are being issued in the Nauklauft Park, there is therefore a concern

around the cumulative impacts on mining on the tourism industry. The cumulative impacts could therefore have a visual and aesthetic impairment which in turn would impact the number of tourists visiting Erongo, and consequently threaten the jobs in the industry. Our concern here is the potential cumulative threat to the tourism industry.

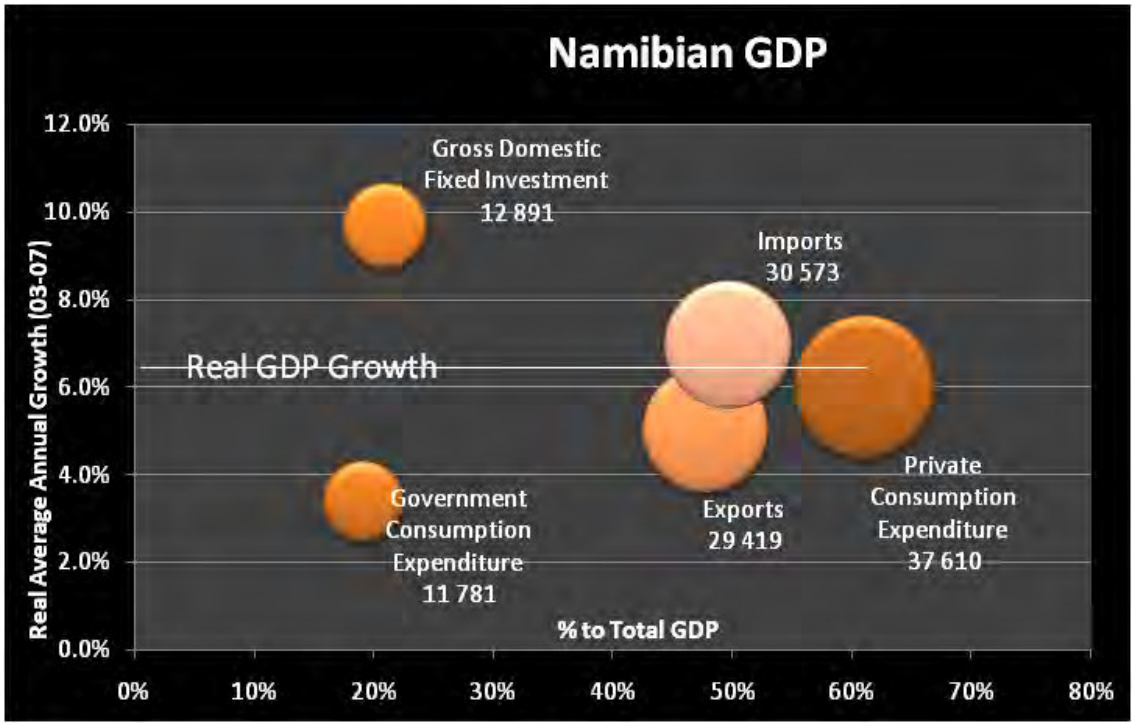
Returning to the size of the Tourist sector, as a start, the hotel and restaurant sector has a GDP of N$ 1 billion and this gives some kind of indication what magnitude the tourist industry may take, which is 2% of total GDP. (The total output of this industry is not just derived from tourists.) Another measure is to multiply the average bed-nights sold in Namibia for 2007/8 with an estimated tourist spend and from this it is concluded that the average turnover from these bed-nights were R3 billion in that year. As turnover is not GDP, this amount needs to be reduced by a third, which gives a R2 billion GDP (4% of GDP). With forward and backward linkages, the tourism industry can be anything between 6-8% of GDP.

Erongo has by far the most registered tourist establishments in Namibia, 510 (39%) out of 1310, and correspondingly 7 073 (27%) out of 26 007 beds, with the result that one can estimate that 30% of the tourist industry is in Erongo. Thus a GDP of R300 million could directly come from the tourist industry, which translates to an estimated 6 000 (15%) employees out of the 37 710 employed in Erongo. This shows the relative importance for job creation in Erongo, as it has three times more people (proportionately) employed than the Namibian national average. The mining industry in total employs under 8 000 people nationally, hence the cumulative impacts of the mining industry could be detrimental to tourism, if not carefully monitored.

However, a counter claim from the mining industry is that it often increases business travelling dramatically in a region and often accommodation operators, albeit with a different target market in mind, does very well from this new kind of tourist.

AN OPEN ECONOMY

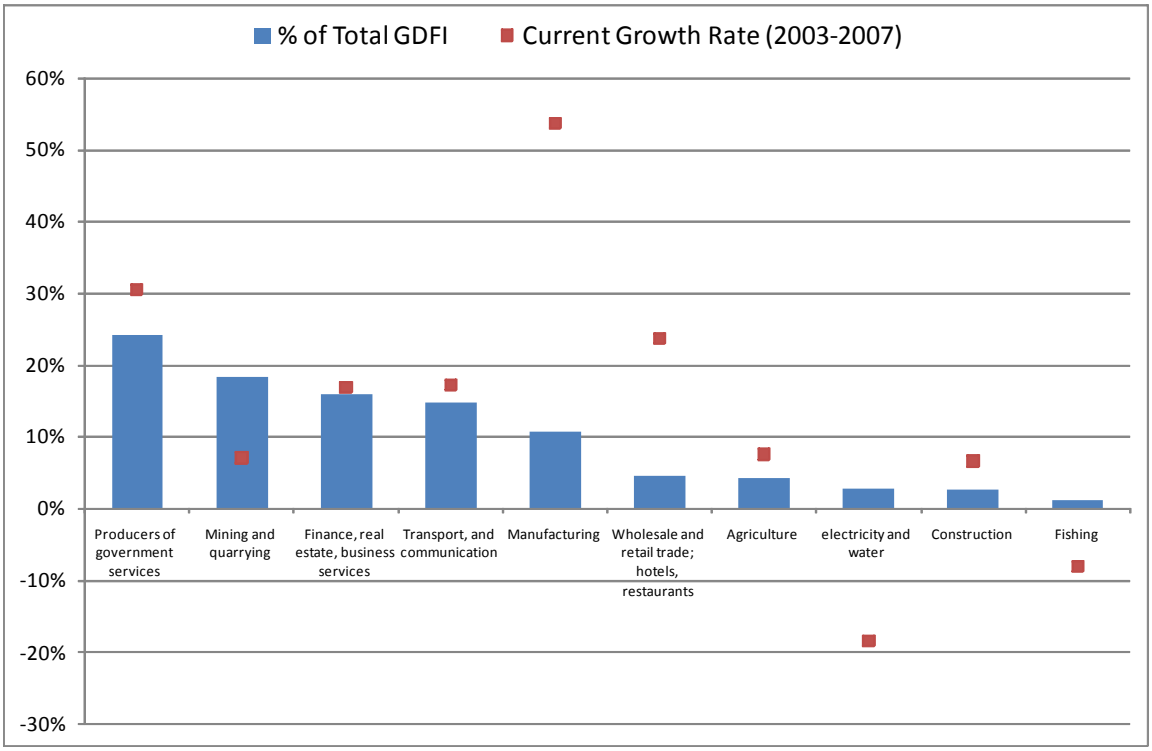
FIGURE 8: EXPENDITURE ON GDP



When looking at the above graph, the following is evident w.r.t. the Namibian Economy:

1. It's a relatively open economy, meaning that a very high percentage of its economic base comprise of imports and exports. This confirms that much of its production is being exported (Fish, Diamonds and Uranium), and most of its manufactured products are imported. A simple comparison with South Africa shows that its imports and exports comprise in the low 30%'s of GGP, as opposed to the Namibian economy where it is well over 50%. Most significantly is that Namibia's imports exceed its exports and hence its foreign reserves will always be under pressure. As with any economy, exports are critical for economic growth and this is probably more so the case in Namibia.
2. A satisfying aspect of the Namibian economy has been its growth in gross domestic fixed investment, which in real terms approached 20% per annum. From the graph below, investments were high from the Government and mining sectors, with the Manufacturing and the Services industries showing particularly high growth.
3. In the figure below, it can be seen that the Government itself was a major driver on GDFI, followed by the private services sector. The manufacturing sector's investment has seen the highest growth, even though it is of a small base.

FIGURE 9: GDFI BY SECTOR



As can be seen from the table below, most of the investment in Namibia was financed from net savings in the economy, with capital transfers from abroad being relatively low.

Table 2: Financing of capital formation

N$m	**2003**	**2004**	**2005**	**2006**	**2007**
Saving, net	5387	8121	8823	14003	11473
Capital transfers receivable from abroad	520	527	535	602	616
Capital transfers payable to foreign countries	-3	-3	-3	-3	-3
Total	**5904**	**8645**	**9355**	**14602**	**12085**

In the graph below, copied from the Namibian Central Bank, total foreign investment has increased dramatically in the last two years, after it lagged tremendously in 2005 and 2006. When correlating foreign direct investment to industry growth, then it is clear that much of the investment went in telecommunications, mining, real estate and transport.

FIGURE 10: NAMIBIAN FDI (SOURCE: BANK OF NAMIBIA QUARTERLY BULLETIN)

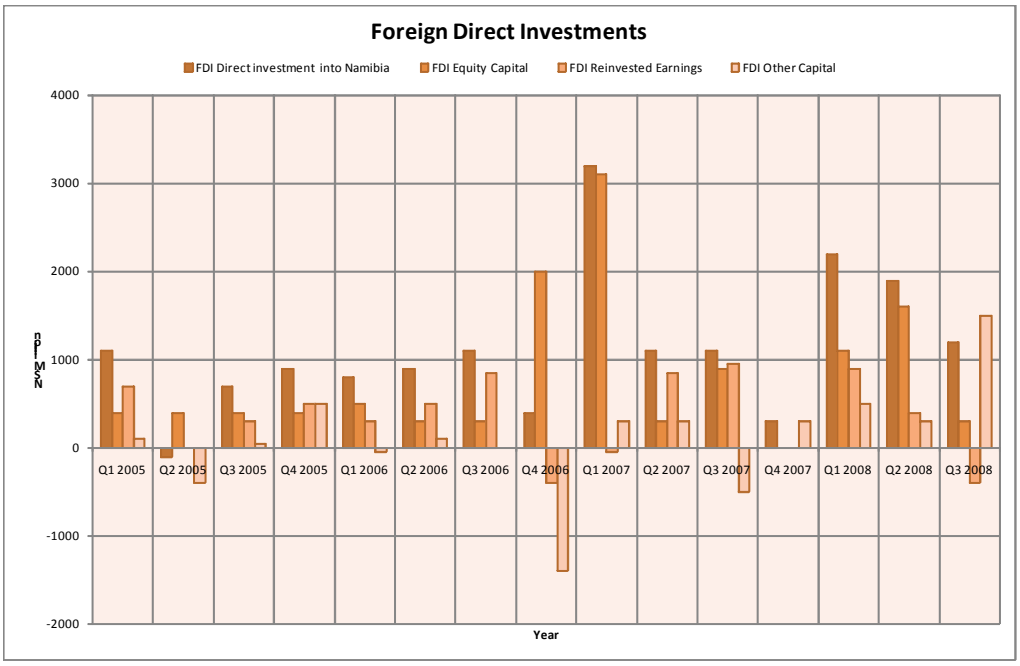
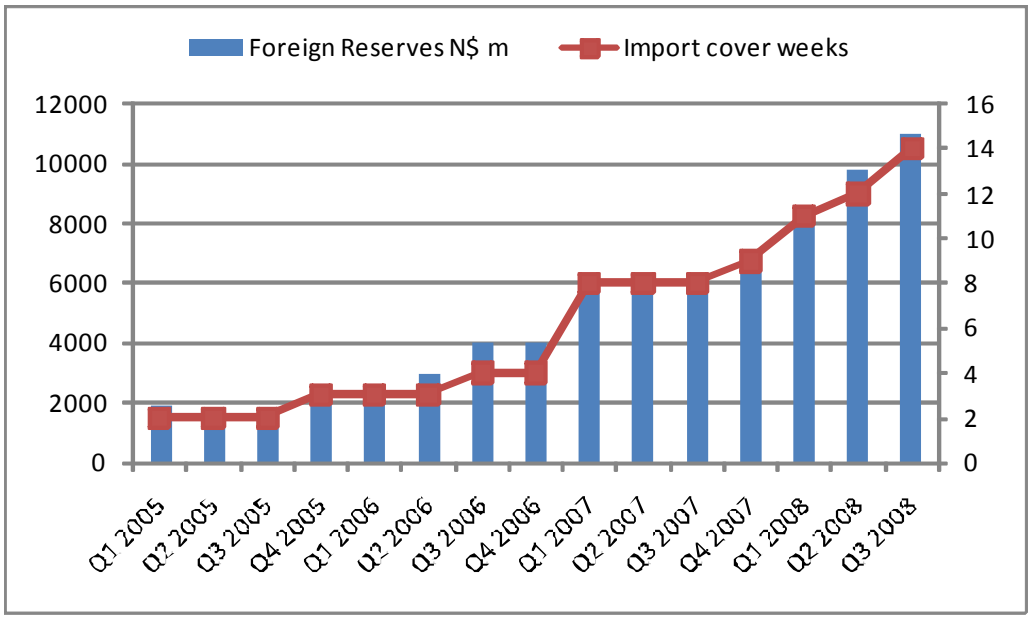


FIGURE 11: FOREIGN RESERVES (SOURCE: BANK OF NAMIBIA QUARTERLY BULLETIN)



ROLE OF MINERALS IN EXPORTS

From the table below, it is evident that Namibia is overly dependent on diamond exports for its foreign exchange earnings. Diamonds made up 35% of total mineral exports in Q3 2008, which means that developments like LHU will assist in diversifying the risk.

Table 15: Unprocessed mineral export values (N$ million)

	2007				2008		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Total exports	**4,834**	**5,575**	**5,065**	**5,093**	**5,256**	**6,162**	**6,292**
Diamond	**1,186**	**2,196**	**1,386**	**1,652**	**1,791**	**2,242**	**2,216**
Diamonds as % of total exports	24.5	39.3	27.3	32.4	34.1	36.3	35.2
Non-diamonds	**1,199**	**845**	**1,302**	**1,470**	**1,012**	**1,248**	**1,366**
Silver	15	13	16	6	7	9	7
Lead	0	31	49	38	0	55	63
Zinc (concentrate)	197	190	140	113	140	108	103
Others*	987	611	1,097	1,313	865	1,076	1,193
Non-diamonds as % of total exports	**24.8**	**15.1**	**25.7**	**28.8**	**19.2**	**20.2**	**21.7**

Source: Ministry of Mines and Energy
* It includes uranium, industrial minerals, dimension stone and Walvis Bay salt refiners

Key Issue and rating	*Baseline*	*Impacts (Direct and Indirect)*	*Mitigation/Enhan-cement*
GGP IMPACT *Very positive impact*	The total GGP for Namibia as at Q3 2008 was N$ 70.1 billion. Although regional GGP statistics are not available, based on household and other statistics our *guestimate* is that Erongo's economy is approximately N$ 12 billion pa.	The increase in economic value added by LHU (thus Outputs minus all supplier input costs), amounts to N$ 2 billion per annum at steady state mining, and the phase III investment is estimated at N$ 630m. Over the life of mine[5], this leads to a direct increase of 1.9% and 10.9% in the Namibian and Erongo economy. Generally, as a rule of thumb, this increase can be multiplied by 2 to give a total impact of 3.8% and 21.8%.	Typical enhancement strategies to consider are as follows: Import substitution (endeavour to manufacture in local economy) – thus reduce imports. Beneficiation – where possible, this needs to be investigated.
INVESTMENT *Very positive impact*	On average, total Gross Fixed Investment (investment and depreciation) in the mining industry was N$ 2 billion for the last five years. Total mining fixed stock amounted N$ 16 bn in 2007. Exploration expenses averaged N$ 400 million dollars over the same period. Total investment in the economy in the last year was N$ 12 billion. Foreign	LHU's investment in fixed assets and its new investment of just over N$ 600 m for all the phases, amounts to N$ 1.85 billion. However, just concentrating on new investment, LHU will be investing 13% of 2008 foreign direct investment. Its total investment as a % of total mining fixed capital stock (thus all infrastructure and	No intervention required.

[5] To be conservative we only used a life of mine of twelve years, even though all indications are 25 years is expected. Thus the initial investment + increase of GDP for twelve years / GDP * 25 years = GDP impact.

Key Issue and rating	*Baseline*	*Impacts (Direct and Indirect)*	*Mitigation/Enhan-cement*
	Direct Investment varies from year to year, but in 2007 and 2008 it was in the range of N$ 4-5 bn.	capital equipment), amounts to 11%. Its new investment plus depreciation as a % of total gross fixed investment in the mining industry is set at 37%, making it one of the more significant mining investments in Namibia currently.	
EXPORTS *Very positive*	Total unprocessed minerals made up N$ 20.4 b (69%) of the total exports of N$ 29.4 b for 2007 in Namibia. Diamonds make up 35% of the exports of unprocessed minerals. Uranium exports are under 18% of unprocessed minerals as it forms part of the "other" export cluster. The importance of exports is paramount as the Namibian economy is very open and given that all imports need to be paid for in foreign currency, any increase in exports is significant.	At optimal level production, LHU could contribute N$ 3.8 billion in exports and this is an 18% increase in mineral exports.	No intervention required as the positives are sufficient.
ECONOMIC GROWTH	The Namibian economic growth rate is on average a real growth of 6% (prior to the economic recession).	The direct increase in the economy above, being 1.9% and 10,9% to the Namibian and Erongo economy is significant.	Any reduction in importation or leakage from the Erongo region will significantly increase the economic growth.

Key Issue and rating	*Baseline*	*Impacts (Direct and Indirect)*	*Mitigation/Enhan-cement*
PROCUREMENT *Very positive impact*	We have not analysed procurement in detail but based on our site visit, it was evident that many sectors (engineering, technical services, retail and financial services are benefiting tremendously in Swakopmund and Walvis Bay due to the LHU impacts.	As we indicated above, the indirect and induced impacts could be a further N$ 2 billion in the total Namibian economy, of which most of this benefit accrues to Erongo. A GGP of this magnitude would translate in total sales of at least N$ 3bn outside the mining industry as a result of LHU's presence. These sales are made up of service suppliers to LHU and sales to its employees w.r.t. their wages.	Seek to proactively engage in CSI projects with a view to give preferential procurement to local entrepreneurs and businesses. Consider developing entrepreneurs where necessary.
IMPACT ON URANIUM INDUSTRY *Very positive impact*	The Uranium industry in Namibia at end 2008 produced 5000 tons of non-enriched uranium, up 43% from the previous year of 3500 tonnes. Based on global demand and supply for the mineral, all indications are that demand for uranium will continue to increase, unless a wild card occurs, such as another Chernobyl and the global leaders lose their confidence in the power source.	At the end of phase III, or by 2011, LHU is planning to produce an additional 4.9 mil pounds tons of uranium. This represents a 31% increase over current production levels.	No mitigation or enhancement required.
HOUSEHOLD INCOME IMPACT	At the end of phase III, LHU will be spending R364 million on direct salaries (on payroll, to labour brokers and contractors). Total private consumption	Nationally the direct increase in private consumption expenditure is 1% and locally in Erongo, LHU's work force will make up 10% of the local economic	Amelioration of social impacts upon mine closure needs to be planned for at this stage. Typical measures that are often taken are

Key Issue and rating	*Baseline*	*Impacts (Direct and Indirect)*	*Mitigation/Enhan-cement*
Very positive impact	expenditure in Namibia was N$ 37 billion and in Erongo it is guestimated at N$ 3.7 billion.	private spending. Including multiplier effects, this can be as much as 20%.	the stimulation of other economic sectors (or minerals) to reduce mine closure impacts.
EMPLOYMENT IMPACT *Regionally very high impacts*	The only firm numbers we have on full employment was done by the Inst. of Policy Research in Namibia and based on this survey, Erongo had 37 701 fully employed people and Namibia 385 329 in 2006. The total workforce for Namibia at the time was 883 000, so 57% of the workforce is unemployed and inactive. Some statistics put the official unemployment rate at 37% and this seems quite plausible. As pointed out in the baseline, this statistic is probably equally applicable nationally and at the local level.	At the end of phase III, a total of 1012 direct jobs would have been created, which is 2.7% of the current jobs in Erongo and 0.26% of jobs in Namibia. The multiplier for jobs in the mining industry is often very large, but without a full econometric model, working on a 3 x multiplier is conservatively prudent. In this case, the total impact on jobs are an increase of 8.1% and 0.8% respectively for Erongo and Namibia.	There are many enhancement strategies to job creation, which are inter alia a consideration of: • Portable skills development for eventual downscaling; • Skills and career development to improve skills of workforce.
TOURISM INDUSTRY *Small Negative Impacts*	Tourism and tourism employment in Erongo is relatively much bigger than the Namibia national average (proportionately three times the size). The mining industry in total has 8 000 employees nationally and the tourism industry has over 13 000 employees, of which we estimate nearly 6 000 work in Erongo.	The visual impact assessment undertaken as part of the EIA concludes that with the correct mitigation, the impacts are moderate to low. Thus individually (that is the action of LHU alone), we cannot foresee a major detraction in tourism as a result of the expansion. The issues are whether the cumulative impact of all the mining development in the Erongo region would have a negative impact and at what point a breakeven is reached	The ideal is a co-existing mining and tourism industry and the impact on tourism needs to be managed through an LED (Local Economic Development)-Forum, consisting of Government, the Mining Industry and Tourism Industry. If a joint development strategy does not exist to allow both industries to grow, then such a strategy needs to be

Key Issue and rating	*Baseline*	*Impacts (Direct and Indirect)*	*Mitigation/Enhan-cement*
		where the jobs created in mining is negated by the jobs lost in tourism. To displace the entire tourism sector's jobs in Erongo would take at least 12 mines with 500 workers per mine to do so. The probability of twelve new mines displacing the total tourist industry in Erongo is very small indeed, as the region is vast (63 000 km^2). (Twelve mines would take up maximum 288km^2, or 0.4% of total area). In addition to this, mines undoubtedly stimulate the hospitality industry in local economies, so some of the displacement would be mitigated by natural forces. However, the fear and perception of a decline in tourism is real and needs to be addressed.	developed and implemented.
POVERTY ALLEVIATION *High Positive Impact*	Poverty alleviation is closely linked to job creation, except that welfare and social spending are further strategies to address the issue. The poverty profile of Erongo region has been set out in the report above, and suffice to say, Namibia has a relatively high poverty profile.	We have already indicated that an increase of 8% in Erongo employment will be effected by LHU in its final form. Total direct and indirect taxes to be paid by LHU is estimated at R450m and over a 15 year period life of mine this amounts to R6.7 billion in contributions to Government. Such increases will	Seek to develop general ABET and skills development of the unemployed in the area to reduce poverty – as a CSR initiative.

Key Issue and rating	*Baseline*	*Impacts (Direct and Indirect)*	*Mitigation/Enhan-cement*
		assist considerably in alleviating poverty.	
BALANCE OF PAYMENTS *High Positive Impact*	On average over the last five years, the total balance of payments account (thus the net of all capital and current transactions with the external sector), stood at N$ 1,3 billion. LHU's total capital inflows could be as much as N$ 3,2 bn (net amount of exports, imports and dividend payments). Total government foreign reserves stood at N$ 10 billion of over 10 weeks of imports cover.	As can be seen the overall net inflows of N$ 3.2 billion from LHU exports is a large proportion of the current balance of payment of N$ 1.3 billion. This will increase the import cover considerably and boost Namibia's foreign reserves.	No enhancement required as it is assumed that the forex regulations will ensure the forex is repatriated to the economy.
FISCAL IMPACTS *High Positive Impact*	Government disposable income at end 2008 was N$ 14,2 billion (thus total income for capital and consumption expenditure, which is used for infrastructure and social development and paying Government Salaries.	At optimal production, LHU could potentially contribute N$ 570 million in royalties, direct, indirect and PAYE taxes. This is a significantly high impact (4% of government disposable income) and if one adds the multiplier, this can be as high as 8%.	No measures as LHU must comply with tax regulations.

IMPACT RATING[6]

Key Issue and rating	*Severity*	*Duration*	*Spatial Scale*	*Probability*	*Notes*
GDP Impact	H+	M	H	H	The increase in GDP is significant, given that it is a small economy; however the increase is national and as long as the project is viable, is a certainty. The duration is rated Medium because the mine has a finite life span.
Investment	H+	M	H	H	The same reasoning as the above applies here. Investment is a sub-component of GDP and LHU in particular will increase investment in Namibia. Its not just the quantity, but also the qualitative nature – thus overall confidence in the economy increases.
Exports	H+	M	H	H	Same as GGP impact.
Economic Growth	H+	M	H	H	Same as above.
Procurement	H+	M	H	H	Same as above.

[6] **CRITERIA FOR IMPACT EVALUATION**

Criteria for ranking of the SEVERITY of environmental impacts	**H**	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. Nor observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.
Criteria for ranking the DURATION of impacts	**L**	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term.
	H	Permanent. Beyond closure. Long term.
Criteria for ranking the SPATIAL SCALE of impacts	**L**	Localized – Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national.
PROBABILITY (of exposure to impacts	**H**	Definite/ Continuous
	M	Possible/ frequent
	L	Unlikely/ seldom

Key Issue and rating	*Severity*	*Duration*	*Spatial Scale*	*Probability*	*Notes*
Impact on Uranium industry	H+	M	L	H	Same as above, except that the mining industry is concentrated locally.
Household Income Impact	H+	M	L	H	Same as above - workers will live locally and it is expected that expenditure will take place there. Repatriation of income to other parts on Namibia and other countries is expected, but this is not significant.
Employment Impact	M+	M	L	H	Employment increase is moderate compared to income increases and the benefits will be more localised.
Tourism Industry	L-	M	L	M	This is probably the most difficult factor to rate. LHU impact only, will not be negative, so the rating to the left applies to cumulative impacts. In our view it would impact the industry in Erongo as we know it slightly negatively (although business tourists will increase). The negative impact will be for the live of mine assuming proper mine closure procedures are followed, will be localised, and the probability of these impacts happening are possible, not necessary definite.
Poverty Alleviation	H+	M	L	H	Poverty alleviation over the life of mine is high simply because mining has a dramatic multiplier effect of low skilled worker employment. Thus, mining increases the services and tertiary sectors and the cost of employment are relatively low in these sectors, alleviating poverty through job creation/
Balance of Payments	H+	M	L	H	Undoubtedly a very high positive impact. It must be emphasised again that Namibia has a small, open economy that is very reliant of foreign currency.
Fiscal Impacts	H+	M	L	H	LHU will contribute significantly to government income.

CONCLUSION AND SUMMARY

The Namibia economy is not very large at N$70 billion pa, but despite its relatively small size, has performed very well in the last five years (excluding the period of the recent economic downturn). Its had good growth, there was undoubted confidence in the economy and the private sector contributed well towards total investment. The Namibian foreign reserves were at an all time high and if anything, Government's dominance in the economy started diminishing.

Like most countries in Africa, it has weaknesses, of which unemployment, probably driven by structural unemployment and high pockets of poverty, remain a key challenge. It is also an arid region and hence a variety of agricultural products would never be possible. It is also a very open economy with exports and imports being a very high percentage of GDP, thus a decline in exports could cause major damage to the well-being of its citizens. Its economic profile is such that it relies heavily on the mining sector for its foreign exchange, even though this sector only contributes 12% of total GDP.

In this light, any investment, provided it is ethical, is of great importance to this economy. Investment from foreign direct investors (as is LHU) are even more precious because the small savings base of the country are not affected in the formation of capital . The two greatest advantages of LHU is its stimulation of the economy through exogenous variables, that is, investment and exports. These two variables generally lead to sustainability economic growth.

Its biggest impacts are in a nutshell:

- Its contribution to the economy, especially to Erongo, which would see the region's economy grow by 10% directly and with mulitiplier impacts, probably 20%;
- Its major potential contribution to generating foreign exchange;
- Its significant contribution to government income through taxes, thus indirectly assisting in social development and poverty alleviation;
- Its contribution to direct and indirect job creation;
- The only moderately negative impact would be the possible reduction in tourists if the cumulative mining impacts deter tourists from visiting Erongo. However, as we show, with the appropriate joint management between mining and tourism, these impacts ought to be well managed simply because Erongo is such a large area.
- Downscaling after life of mine (25 years from today), requires considerable attention as this will have a devastating impact on the local economy if the base does not increase considerably.

Economically speaking, LHU contributes very positively to the Namibia and Erongo economies and will increase this contribution considerably after Phase 3.