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Husab Uranium Socio- Economic Impact Assessment

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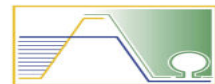
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LIST OF ABBREVIATIONS

ERC	
Erongo Regional Council, 7	
EVA	
Economic Value Added, 23	
GDFI	
Gross Domestic Fixed Investment, 18	
GDP	
Gross Domestic Product, 11, 15	
GGP	
Gross Geographic Products, 15, 18	
HDI	
Human Development Index, 11, 12	
LHU	
Langer Heinrich Uranium, 6, 21, 24, 30	
NDP	
Namibian National Development Plan, 7	
National Development Planning, 7	
Privacy And Security For Landowners	
get info?, 39, 44	
SACU	
South African Custom Union, 14	
SAIEA	
Southern African Institute for Environmental Assessment, 7, 8	
SEA	
Strategic Environmental Assessement, 8, 10, 27, 28, 31, 33, 34, 45	
Strategic Environmental Assessment dated Q1 2010, 27	

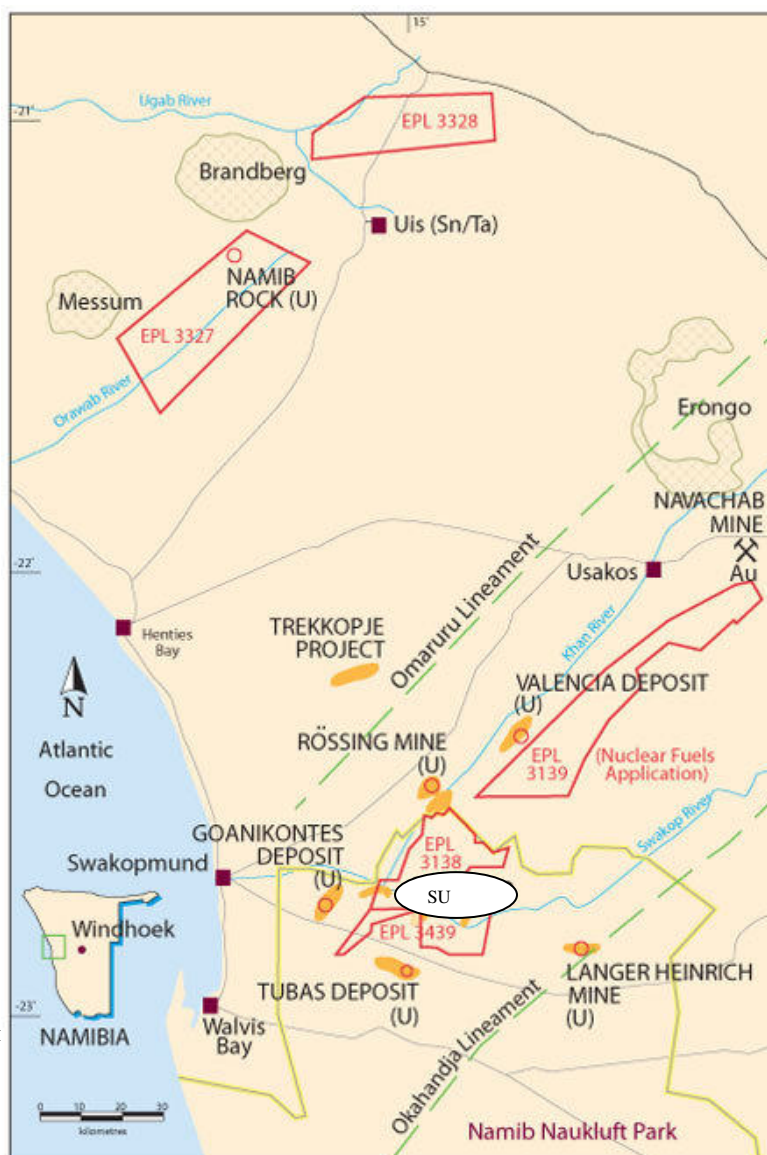
INTRODUCTION AND BACKGROUND

INTRODUCTION

The key objective of this socio-economic impact assessment is to make recommendations on how Swakop Uranium can positively contribute to sustainable development, in a socio-economic context, in its labour areas.

PURPOSE OF ECONOMIC IMPACT ASSESSEMENTS

The IAIA¹ defines an impact assessment as "...it is the process of identifying the future consequences of a current or proposed action." In a socio-economic sense, this implies understanding the impacts on society and the economy and which aspects pose the highest risks and how to mitigate these.



INTRODUCTION TO EXTRACT RESOURCES

Extract Resources Limited (ASX and TSX code: EXT) is based in Perth, Western Australia.

The Company's primary business focus is in the African nation of Namibia, in which it has a large land position of 2653km² over several licences. Extract is mining in Namibia through its fully owned subsidiary, Swakop Uranium. While the projects have various mineral occurrences, Extract's main objective is based around the potential of the uranium (U₃O₈) rich provinces in Namibia, particularly within the

alaskite belt which hosts the world class Rössing Mine.

Extract's aim is to explore, evaluate, develop and produce U3O8 from its advanced projects, as a source of fuel conversion for low-cost, environmentally friendly nuclear power. In doing so, Extract wishes to maintain a policy of quality environmental management and social and corporate responsibility in meeting its business objectives.

The Company's activities in Namibia are conducted in a well-managed regulatory framework with strong and supportive relationships in the various ministerial offices.

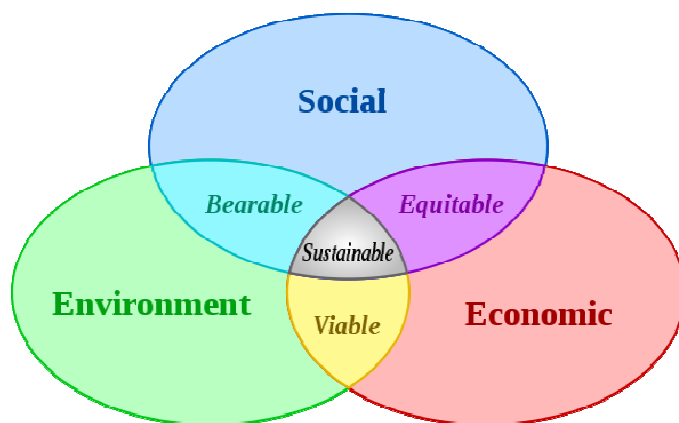
The Company sees that the ultimate value for all stakeholders is through their investment in the development of the uranium resources.

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 a 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 (EIA) in SA, the 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 Rössing South, shown below, are mostly positive, and should be read in conjunction with the other specialists' reports on its 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.

STAKEHOLDERS RELEVANT TO SWAKOP URANIUM²

As Rössing South will be situated approximately 25 km's to the South of a small town, Arandis, and approximately 60 km's west of Swakopmund, it has no immediate communities (stakeholders) that face resettlement or may be impacted upon directly. From a social impact point of view, it means that its very immediate site specific area is not likely to have major human settlement impacts.

During construction phase, however, approximately 3000 temporary workers will settle in Swakopmund and this impact is addressed below in this report.

Its significant stakeholders can be identified as follows:

- The Ministry of Health and Social Services (MHSS), which oversees policy formulation and implementation of health issues, undertakes facilities provision and maintenance, manages sexually transmitted and other diseases and assist in the well-being of mothers and children.
- The Ministry of Works and Transport (MWT) which is tasked to provide effective transport infrastructure and specialised services. This includes the Roads Authority (RA) which has been incorporated to manage the national road network, with a view to support economic growth.
- The Ministry of Environment and Tourism (MET) which is tasked to manage the country's ecological processes and life-support systems, conserve biological diversity, and ensure that natural resources is sustainable for the benefit of all Namibians, both present and future.
- The Ministry of Labour and Social Welfare (MLSW) which 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, Act no. 5 of 1995 and The Affirmative Action Act, (Employment) Act no. 29 of 1998. The various Acts stipulate, amongst other things, 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.
- The Erongo Regional Council (ERC), like all the other Councils, is tasked "to undertake ... the planning of the development of the region for which it has been established (SAIEA, 2007). However, it is constrained by the limited meaningful power it has gained and by the slow progress in decentralisation, which is addressed as a critical issue for accelerated development in NDP. The ERC has a number of focus areas for development, including water resources, the environment, tourism and fishing and marine resources. Regional Development Plans are aligned with NDPs and, ultimately, with Vision 2030 of the Government of Namibia (this Vision outlines the desirable development state of Namibia by 2030).
- The key municipalities that Swakop Uranium will need to engage include :
 - Walvis Bay Municipality;

² This section has been reformulated and paraphrased

- Swakopmund Municipality and
- Arandis Municipality
- Residents of Swakopmund
- Private Stakeholders include:
 - Private Tour operators;
 - Potential sub-contractors and suppliers to the mine and
 - Other mining groups.

IMPLICATIONS FOR SWAKOP URANIUM

All the above stakeholders are significant to Swakop Uranium as it has to comply with a variety of legislative provisions and it needs to be a good corporate citizen with respect to these stakeholders. Given the sensitive area in which it is located, the interest from tour operators and conservationists is high and the mine will be scrutinised closely with respect to managing its impacts.

RELEVANT HIGH LEVEL POLICIES

This section describes the high level policies that Swakop Uranium needs to take cognisance of when conducting its business as a good Corporate Citizen in Namibia.

The first point to note is that Swakop Uranium will be operating in a country where The Namibian Government has adopted policies that promote sustainable development. Most of these policies originate in clauses of the Namibian Constitution. In Article 95(1), 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).

In addition, the Namibian Government developed a Vision 2030, which is stated as “A prosperous and industrialised Namibia, developed by her human resources, enjoying peace, harmony and political stability”. This Vision includes the improvement of: a) People’s quality (this includes issues pertaining to equality and social welfare, human resource development and institutional capacity building, and population, health and development, and : b) Sustaining the Resource Base , which is organized around production systems and natural resources, and also touches on aspects of equality and social welfare (GRN, 2005).³

In taking the above Vision forward, the challenge of balancing conflicting needs between resources and social development is clear. For this reason, the SAIEA⁴ has been appointed to

³ Source of information in this section: Marie Hoadley

⁴ In 2009, the Southern African Institute for Environmental Assessment (SAIEA) was contracted by the Government of the Republic of Namibia (GRN), with funding provided by the German Government through the German-Namibian Technical Cooperation Project of the Geological Surveys of Germany (BGR) and Namibia (GSN), to undertake a Strategic Environmental Assessment (SEA) for the so called

develop a framework for Uranium development, named the “Uranium Rush’ which is pertinent to the impacts addressed in this report.

BOX 1: INTRODUCTION TO SEA

In 2009, the Southern African Institute for Environmental Assessment (SAIEA) was contracted by the Government of the Republic of Namibia (GRN), with funding provided by the German Government through the German-Namibian Technical Cooperation Project of the Geological Surveys of Germany (BGR) and Namibia (GSN), to undertake a Strategic Environmental Assessment (SEA) for the so called ‘central Namib Uranium Rush’.

Mining for various minerals has been ongoing in the central Namib since 1901, and the first uranium mine was commissioned in 1976. Over the past 30 years, prospecting for uranium was at relatively low intensity, but this changed recently when uranium prices increased dramatically and it became apparent that the gap between energy supply and demand was significant and growing. The sudden scramble for prospecting rights resulted in the GRN placing a moratorium in 2007 on further uranium prospecting licences, so that the authorities and other stakeholders could consider how best to manage the ‘rush’. However, by that date 36 exploration licences for nuclear fuels had already been granted in the central Namib. Of these, 27 EPLs were current and seven were pending renewal. Since the moratorium does not prevent the GRN from upgrading an existing prospecting licence to a mining licence, the moratorium is not likely to significantly slow the Uranium Rush. At the time that the SEA was conducted, four mining licences had been granted: two mines were operational, the third was undertaking test mining, and the fourth was beginning construction. Prospecting at three of the most promising new deposits was in an advanced stage. Thus, the Uranium Rush was, for practical purposes, already underway when the SEA was commissioned.

Nevertheless, the SEA is expected to provide strategic direction to the uranium industry in the Central Namib. This SEA differs from most others conducted elsewhere because the development in question is neither a policy, plan nor programme, but rather a collection of projects, each being conducted by individual companies that are not related to each other, and in many cases, undertaken in isolation of each other.

However, they collectively combine to produce cumulative impacts, with areas of concern including loss of ‘sense of place’, over-abstraction and pollution of groundwater, short and long term radiation exposure of workers and the public, stress on physical and social infrastructure and opportunity costs on other, more sustainable industries.

The flip side of the coin is that the Uranium Rush offers substantial opportunities for synergies, and the industry could stimulate critically needed development, which in turn enables growth in many other sectors. Examples include the construction of desalination plants, upgrading power supply, and investing in housing, schools, roads and health facilities.

Stakeholders within the sector have a vision and incentive for branding the central Namib as a ‘Green Uranium Province’, where the mines subscribe to best practice codes of conduct and collectively invest in programmes and projects that are important for the sustainable development of the area. In this context, the SEA was expected to provide a roadmap for improved practice and meaningful corporate social responsibility initiatives. In return, the mines would be well placed to compete in a market that is sensitive to environmental issues. By being ‘green’, they could perhaps negotiate better contract prices and possibly have an advantage over suppliers from other parts of the globe.

Through this SEA, it is hoped that the “Namib Uranium Province”, and the individual mining companies operating in it will be regarded as an environmentally responsible ‘brand’. This will be good for their reputations and triple bottom-line, and for Namibia’s international image. The overall objectives of the SEA were defined in the Terms of Reference (TOR) as follows:

- Provide recommendations on accepted overall strategic approaches for sustainable mining development in the Erongo Region.
- Develop and assess viable scenarios of development in areas of specific relevance to the mining development as a basis for subsequent decision-making and formal planning.
- Provide guidance for overall solutions on crucial (cumulative) impacts and challenges stemming from the mining operations.
- Outline a Strategic Environmental Management Plan (SEMP).

WHAT DOES THIS MEAN FOR SWAKOP URANIUM?

A country that expressly adopts sustainable development as a philosophy for development, implicitly accepts that organisations need to be good corporate citizens and show how they balance transparent governance, environmental responsibility, social responsibility and economic viability.

What this means is that the major sustainable development themes, as expressed in best practices throughout the globe, need to be considered by Swakop Uranium. From a purely socio-economic perspective, the following needs to be looked at by Swakop Uranium (amongst others):

- The development and adoption of good corporate governance, sustainable development policies and risk management measures;
- Obvious compliance to all relevant labour and social legislation;
- The acceptance of human rights management;
- The recruitment and development of local staff;
- Best practices with regard to health care, housing, education and training, and transportation of staff;
- The development of down- and up-stream social enterprises that benefits the local population (including the development of community social enterprises to create jobs);
- The adoption of socio-economic mine closure best practices over the life of mine;
- The fair payment of all forms of direct and indirect taxes;
- Transparent monitoring and reporting of socio-economic sustainable development issues.

As a further guide, in the SEA, a range of factors constituting aspects and indicators around socio-economic development (in the form of environmental quality objectives) have also been set. We used these to form the basis points for the impacts and mitigation strategies for Swakop Uranium.

However, prior to discussing impacts and mitigation strategies, the socio-economic baseline of Swakop Uranium’s labour source areas is discussed.

ERONGO SOCIO-ECONOMIC BASELINE

INTRODUCTION

To assess the impacts on society when a significantly big enterprise is established, as is the case with Swakop Uranium, a baseline describing the socio-economic status quo into which the mine ventures, is of the utmost importance as it provides the context within which its impacts are felt.

URANIUM RUSH AND THE ERONGO ECONOMY

The first important observation is that the Erongo economy is set to experience an economic boom in the next decade, should the demand for uranium continue to grow. In our view, based on the multitude of uranium mining applications in the region, there is an air of expectancy in the region which approximate to that of a 'uranium fever'.

The economic contributions that large uranium mines can make to the Erongo Region are very significant. A typical uranium mine could add up to NAD 750 million of GGP pa to a region that is expected to have a GGP of N\$ 14 billion by end 2010. Thus one mine would add 5% direct economic value, and after induced multipliers, this could be 10%. If one extrapolates this and assume ten new mines will be started after Rossing and LHU (not impossible), then the growth scenario is staggering. It would mean the economy could double in the next seven-ten years, excluding the normal growth driven by other sectors.

An example is Rossing Mine, which added economic value (GDP) of NAD 1,6 billion in 2009 (2008: NAD 2.8 billion)⁵. Directly, it makes up 10% of the Erongo economy and with multipliers, after leakage, we estimate this would be at least 15%.

The very valid concern brought to the fore by the SEA which is how can this be of sustainable benefit to all stakeholders in Erongo is thus of extreme importance. So many regions all over the world have experienced this kind of rush and then the remaining legacy has often been less than desirable. It benefitted few individuals, but not most of the population. Thus, Erongo has this opportunity to set an example on how to leave a sustainable development legacy in its mine labour areas.

NAMIBIAN AND ERONGO POVERTY PROFILE

Swakop Uranium is establishing itself in a developing economy which has, on one hand, the benefits of sophisticated infrastructure and high skills, and on the other, the challenges that are borne by joblessness and poverty.

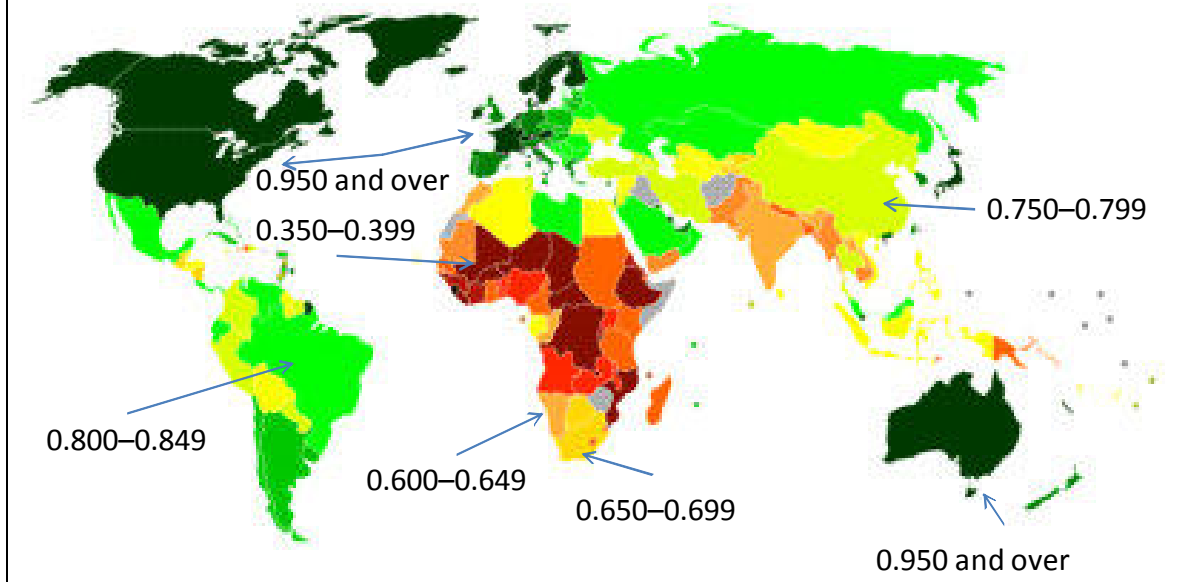
The well-known Human Development Index⁶ map of the world below shows the relative

⁵ (Published Stakeholder report 2009, http://www.rossing.com/files/rossing_stakeholder_report2009.pdf)

⁶ 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.

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 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.

CHART 1: HDI AROUND THE WORLD



The HDI may very well summarise the development status of Namibia, as being that of a developing economy, on average, and being much like South Africa, **a country with two economies**. 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:

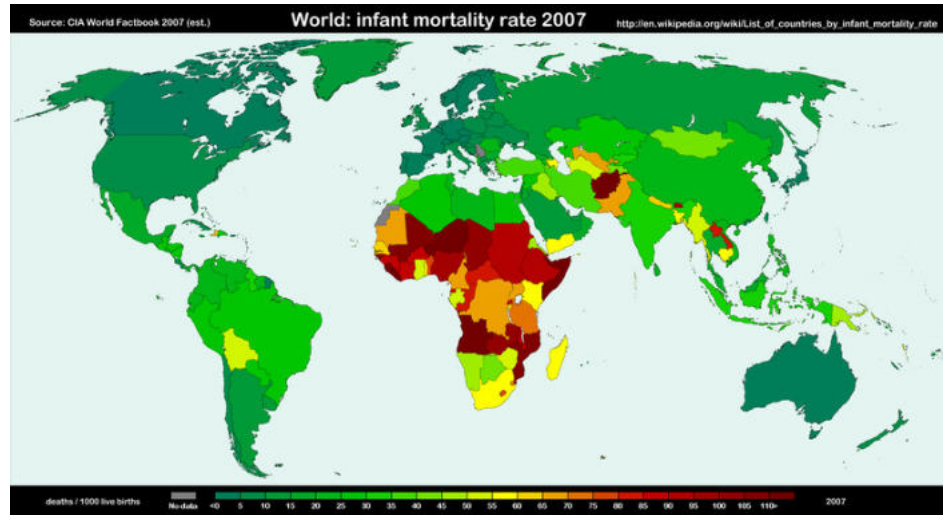
Erongo and Namibia have gini-coefficients of 0.60 and 0.67 respectively, which indicate a relatively high income inequality. Perfect Income Equality is zero and Perfect Income Inequality is one.

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 often reflect the number of dependents as being as high as nine.

The official unemployment rate is a further indicator of poverty, and the Erongo's unemployed rate of 25% (this is the strict definition as opposed to the generally accepted rate of 34%) and compares 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 52, which are better than the SA average of 56, but on the whole far from the 0-5 values shown for highly developed countries.

CHART 2: WORLD MORTALITY RATE MAP



Furthermore, life expectancy at birth is 56 years for Erongo, and a low 49 for Namibia as a whole. These again compare unfavourably with developed nations which show values of over 70 years for life expectancy.

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

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

LIVELIHOODS

Wages and salaries constitute the main source of household income for 67% 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 (which 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. Interestingly, pensions are 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.

TABLE 1: LIVELIHOODS IN ERONGO (2004 INSTITUTE FOR PUBLIC POLICY RESEARCH, NAMIBIA)

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

EMPLOYMENT AND UNEMPLOYMENT INDICATORS

Reliable labour statistics are difficult to obtain in Namibia, but there is abundant evidence to suggest that the unemployment rate is high. ***Based on many reliable sources, the unemployment rate reached 37 % in 2008, which is not the official unemployment rate.*** Namibia's unemployment rate is the highest in the SADC member states, with Swaziland trailing behind at 30 %. Combining the underemployment statistics, the total unemployment rate could exceed 60%. According to a well published Afro-barometer survey, over half of the people surveyed in Namibia say that unemployment is the single most important economic problem.⁷

The Namibian population was estimated at 2.1 million people in 2008, of which 124 000 (5.9%) lived in Erongo. This is, in fact a very small population, and hence a large economy is never really possible, unless major innovations or foreign investment take place.

The most recent Namibian Labour Survey available (2004) shows the overall employment statistics.

TABLE 2: REGIONAL EMPLOYMENT STATISTICS (2004 INSTITUTE FOR PUBLIC POLICY RESEARCH, NAMIBIA)

Region/ Area	Sex	Employed	Unemployed	Labour force	Inactive	Total
Erongo	Total	37 701	13 192	50 893	12 433	63 326
	F	14 078	6 451	20 529	7 727	28 256
	M	23 623	6 741	30 364	4 706	35 070
				0		0
Namibia	Total	385 329	108 119	493 448	393 880	888 348
	F	168 677	56 125	224 802	241 237	466 412
	M	216 652	51 994	268 646	152 643	421 936

In Erongo, due to the arid climate, 80% of the population lives in the urban areas (as these have

⁷ SA Regional Poverty Network

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 be pointed out that the land that God made in anger is vast and 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 is slightly better educated than the average Namibian.

The **migration** patterns into Erongo are 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 corroborates, to a large extent, the strong harbour, tourism and mining growth nature in the region.

ECONOMY DRIVEN BY MINING, MARINE AND TOURISM

In Chart 3 below it can be seen that mining, at present, makes up over 30% of the Erongo economy, with fishing second at 18%. However, land fishing processing adds another 7% to this which means the total contribution of fishing stands at 25%, which is just below the mining contribution. Manufacturing, in the chart below, is therefore high given that it includes fishing production on land. Should one add a further estimated 5% emanating from port activities, then marine related economic activities is an equal 30% contribution to mining. Tourism is not recorded as an economic sector given that value added are distributed across various industries, but the combination of wholesale, retail, hotels and restaurants, and transport gives an indication of that sector's importance. However we estimate this sector to have just under 11 000 employees in Erongo (see page 27 below for more detail).

Taking this structure forward, the next chart shows Erongo's relative strengths and weaknesses, using the well-known location quotient in economic development. This quotient simply measures the proportion of an economic sector to that of a larger economy, for example . below the Mining and Fishing Sectors contribute twice as much to the Erongo economy compared to either Namibia or South Africa. It therefore emphasises what we know, namely mining and marine are significant comparative advantages in the Erongo economy. Given the diffusion of the tourism sector into other sectors, it requires more sophisticated models to compare it, although we are convinced that this sector also has considerable comparative advantages for the Erongo economy.

It also shows the key weakness in the Erongo economy, which is the low manufacturing and services industries – both industries that drive wide-spread innovation.

Chart 4, below, shows measures of diversification, also known in economic development as Tress Indices. A 100 means no diversification (i.e. a typical agricultural society with no other sectors) and nil means that all the economic sectors are equally balanced. (E.g. if there are 10 sectors, then each will contribute 10% to the economy). What is interesting, below, is that Erongo today is relatively well diversified and this is because it has *three* propulsive industries, previously mentioned, as mining, marine and tourism.

It therefore also shows quantitatively what all stakeholders know qualitatively, namely the importance of balancing these industries.

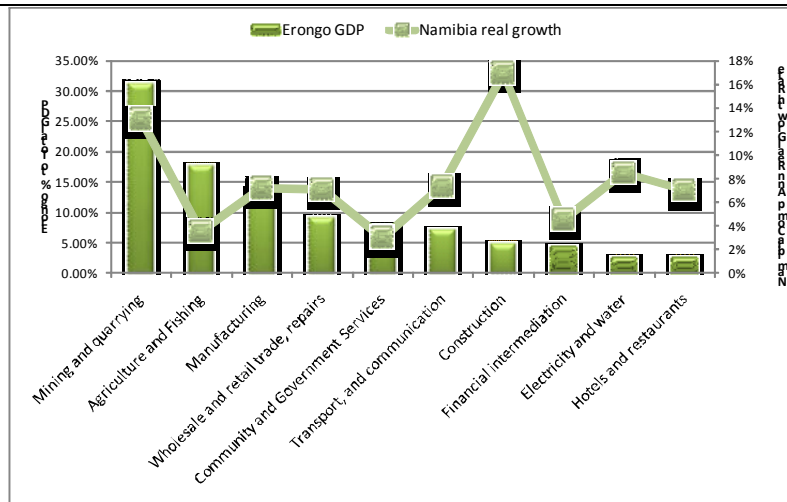


Chart 3: Erongo Economic Structure

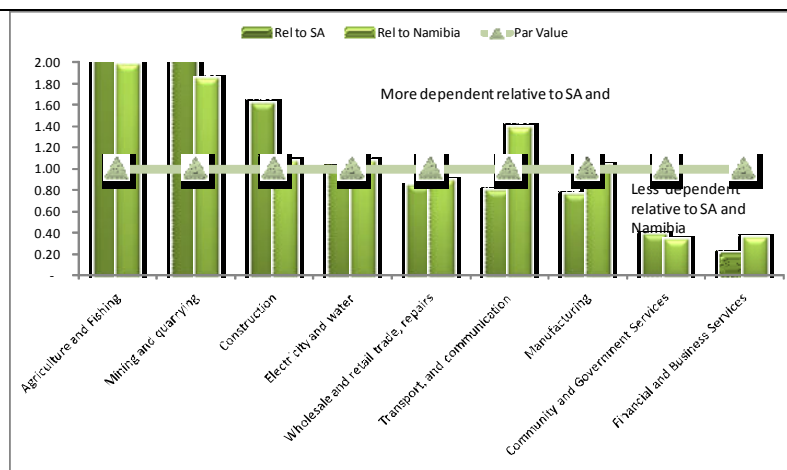


Chart 4: Erongo Relative Strength And Dependence

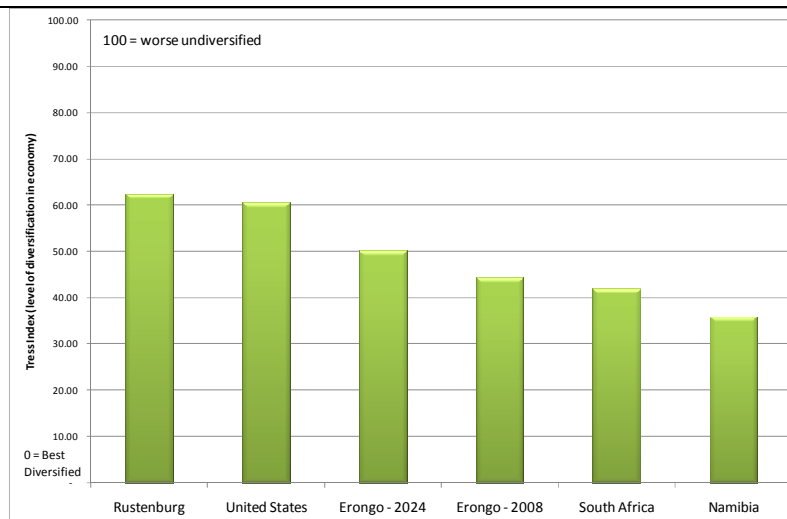
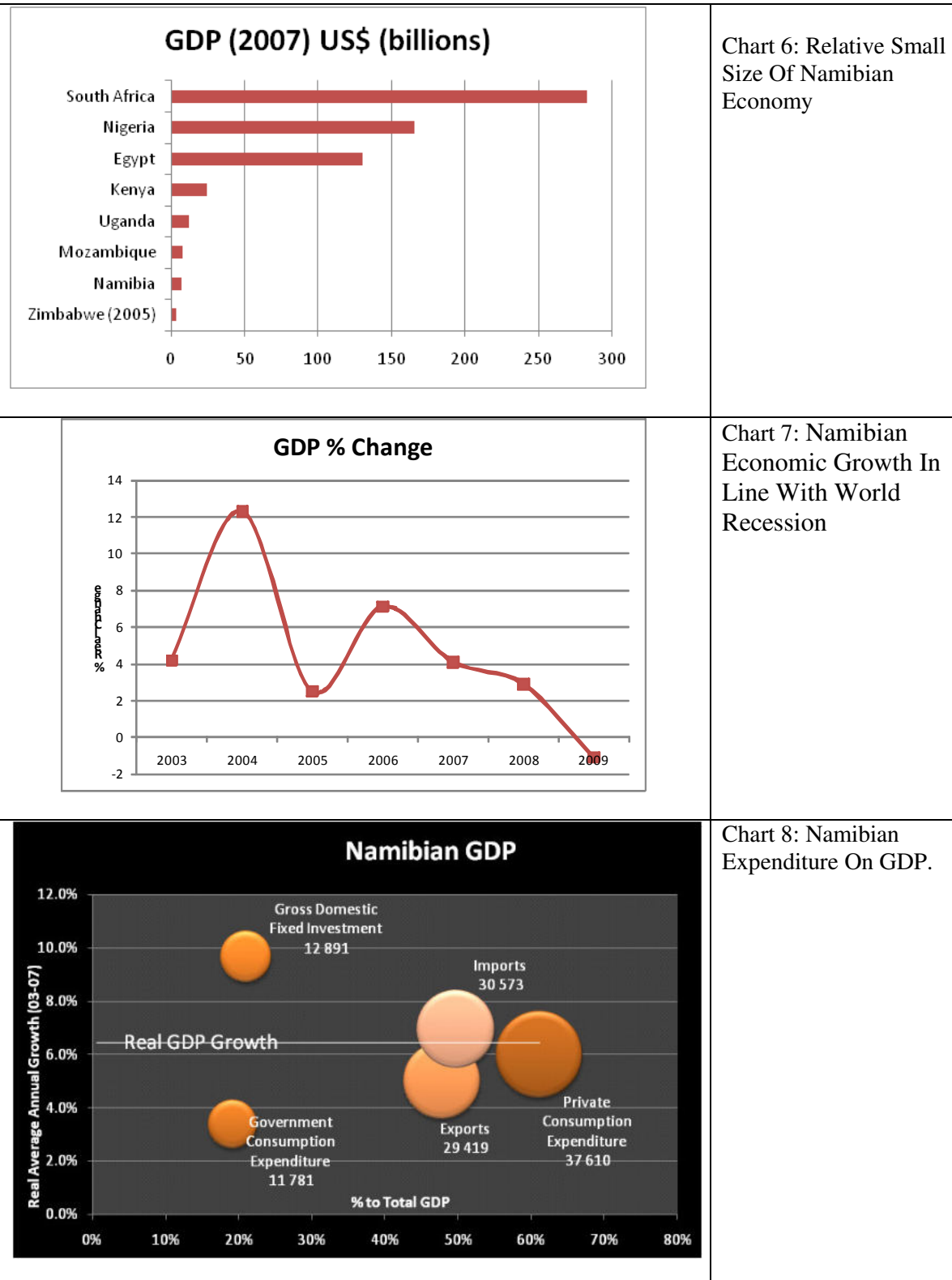


Chart 5: Measure Of Diversification Of Erongo Economy



When looking at the above graphs, the following points are evident with respect to the Namibian Economy:

- It is a relatively open economy, meaning that a very high percentage of its economic base comprises imports and exports. This confirms that much of its production is being exported (fish, diamonds and uranium and other minerals), and most of its manufactured products are imported. A simple comparison with South Africa shows that its imports and exports are in the low 30% of GGP, as opposed to the Namibian economy where it is well over 50%. Most significantly, 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, in the case of Namibia.
- A satisfying aspect of the Namibian economy has been its growth in gross domestic fixed investment, which in real terms approached 20% per annum in recent years. Investments were high across most industries, being propelled by the Mining and Government Sectors. 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.

In the graph below, sourced 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, it is clear that much of the investment went into telecommunications, mining, real estate and transport.

Foreign direct investment, in particular, has grown substantially, and it is important to note that Namibia's foreign reserve position is very positive.

Chart 9: Foreign Reserves (source: Bank of Namibia quarterly bulletin)

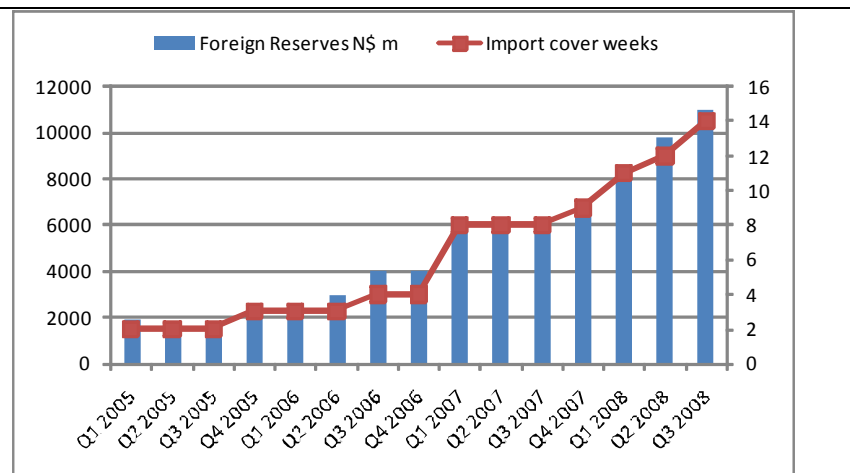


Chart 10 :Namibia
Uranium Production

A very pleasing aspect of the Erongo economy has been the increase in uranium production and the commensurate interest in establishing more mines.

CHART 10: NAMIBIAN URANIUM PRODUCTION

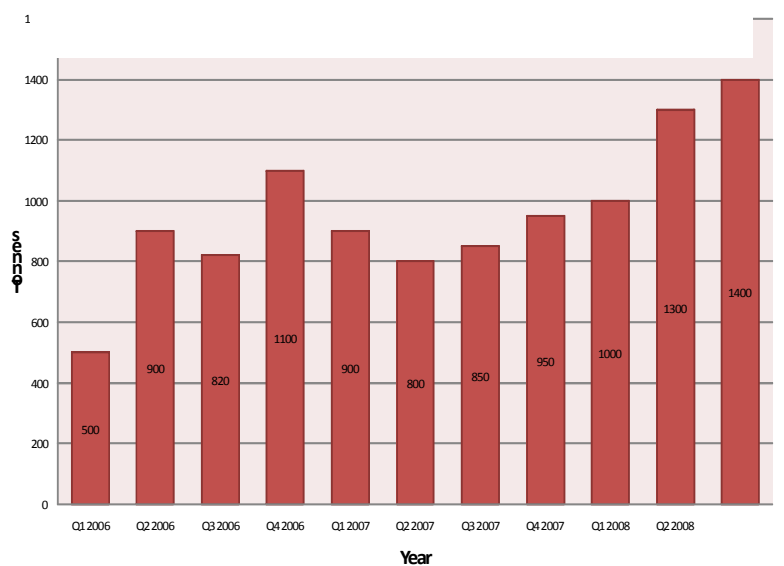
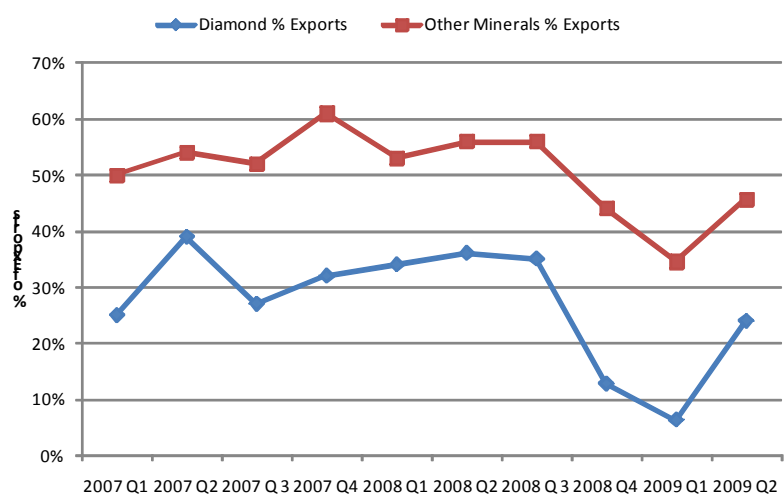


Chart 11: Namibian
Exports

Other minerals (including Uranium) already a major foreign exchange earner



Based on current projections and results of exploration companies in Namibia, the annual production of uranium may increase to more than 19000 tonnes (50.91 million pounds) by 2012, resulting in a 376% growth rate from 2007 to 2012. In three short years, Namibia has increased its uranium reserves from 6% of the world's uranium reserves to 10% in 2009.

DRIVERS OF ECONOMIC GROWTH

There are many factors that determine economic growth, ranging from stable economic policies to the level of skills in a country. A very useful framework for the determinants of economic competitiveness is that of Michael Porter's Competitive Advantage of Nations, in which he elaborates on a variety of determinants. This work spawned the world competitiveness reports which are also an excellent source for providing determinants of economic growth. A few drivers of economic growth are outlined below.

DEMAND FOR URANIUM

The page that follows shows the growing demand forecast for Uranium and the long term growth in Uranium prices. These serve to indicate that the high demand for Uranium is set to increase.

Table 3: Demand for nuclear fuel (SOURCE: WORLD NUCLEUR ASSOCIATION, JAN 2009)

World Reactors (Jan 2009)	No.	Capacity Giga-Watt
Currently Operating	436	372
Under Construction	43	38
Planned	106	118
Proposed	266	262

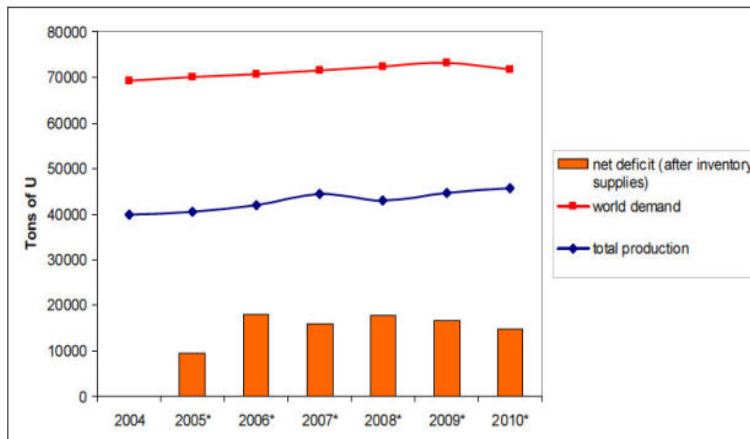


Figure 1.3 World supply and demand curves for uranium showing an increasing shortfall after contributions from stockpiles (data: Morgan Stanley forecasts; *estimates used for 2005-2010).

Chart 12: Morgan Stanley uranium supply and demand

By 2025, world nuclear energy capacity is expected to grow to between 450 GWe (+22%) and 530 GWe (+44%) from the present generating capacity of about 370 GWe. This will raise annual uranium requirements to between 80 000 tonnes and 100 000 tonnes.

Atomic Energy Agency

Uranium Nominal Spot Prices

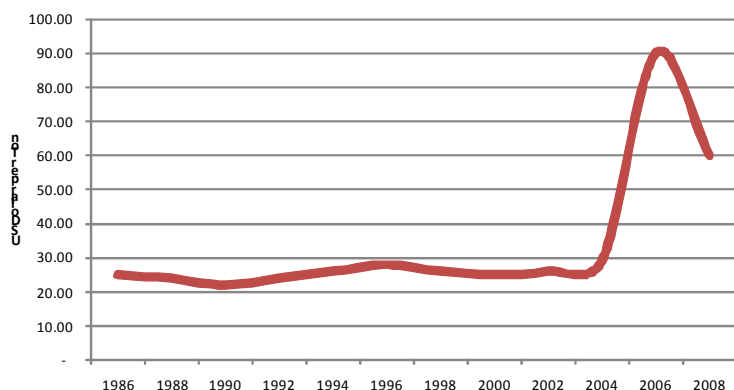


Chart 13: Uranium prices a major driver of Erongo economy

The net result of the increase in demand for Uranium is the exponential increase in applications for Uranium exploration and mining licenses in Erongo. The most recently stated interested mines amount to almost sixty. In addition to this, Areva has recently started mining and both Rossing and Langer Heinrich are busy expanding their operations.

However, it is not just uranium demand that will grow the Erongo economy, but also the increase in the use of the Walvis Bay Harbour facilities. A large amount of information points to Namport intensifying its transport corridors, connecting SADC with the Global Markets. In particular, the growth in the Angolan economy has brought about a major boost in cargo handled at Walvis Bay and will continue to do so. Furthermore, a large array of infrastructural projects are currently underway, including a new coal -fired electricity generator, a desalinisation plant and several property developments. In addition, a number of economic development initiatives, for example the Export Processing Zone, are also underway (even though its success is hard to measure in recessionary economic times).ⁱ

CHART 14: GROWTH IN FREIGHT TONNES AT NAMPORT

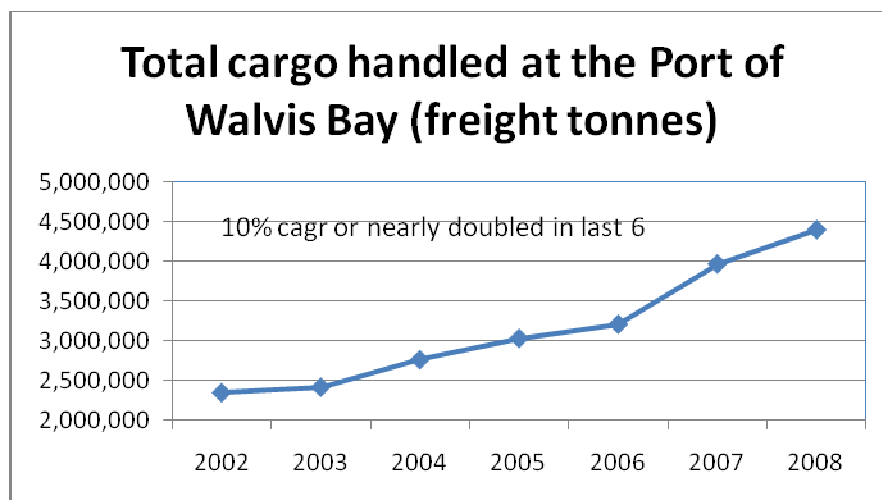
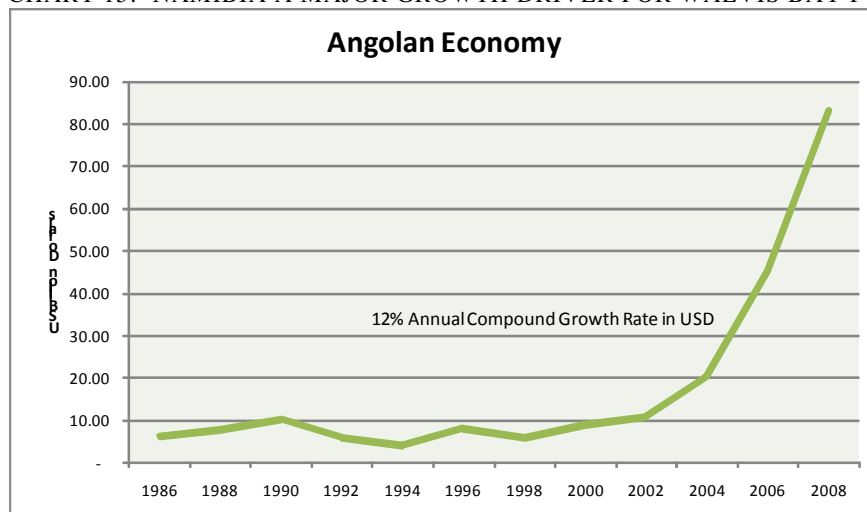
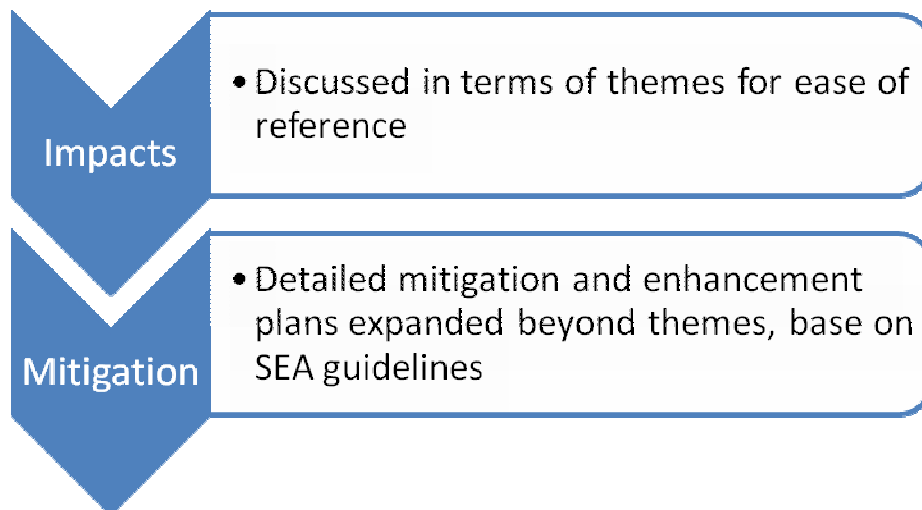


CHART 15: NAMIBIA A MAJOR GROWTH DRIVER FOR WALVIS BAY PORT



IMPACT ASSESSMENT

Given the extent and scope of a socio-economic impact assessment, it was decided to discuss this wide topic in the manner that follows, firstly by theme (as many impacts are cross-cutting), and then by mitigation in detail, per impact.



Theme	Impacts
Economic: GDP and Income	Impact On Household Income/GDP
Economic: Labour	Skills Development Opportunities
	Uranium Companies Hire Locally Where Possible
	Impact On Employment
Economic: Government Income	Impact On Fiscus
	Impact On Exports / Forex
Tourism, Recreation and Heritage	Natural Beauty Of The Desert (Tourism)
	Access To The Desert For Recreation By Locals
	Heritage Resources
Economic: Supply Chain Management	Impact On Business Growth
	Impact On Import Substitution
Economic Diversification	Non mining industry development
Economic Reputation	Namibia's International Image
Economic: Closure	Socio-Economic Mine Closure Impacts
Social Cohesion	Regional Sport And Cultural Activities
	Privacy And Security For Landowners
	Mine-Only Townships Or Suburbs
	Quality Of Life In Nearby Towns
	Access To Affordable Property In Towns
Social Services	Access To Health Care Facilities
	Access To Affordable Education

✓1.POTENTIAL IMPACT ON GROSS GEOGRAPHIC PRODUCT AND HOUSEHOLD INCOME

Although the mine plan has not been finalised, early indications are that it will employ 1200 people at steady state mining and an investment of R6.5 billion may well be required initially. The positive impact of these quantities is outlined below, where we show the following:

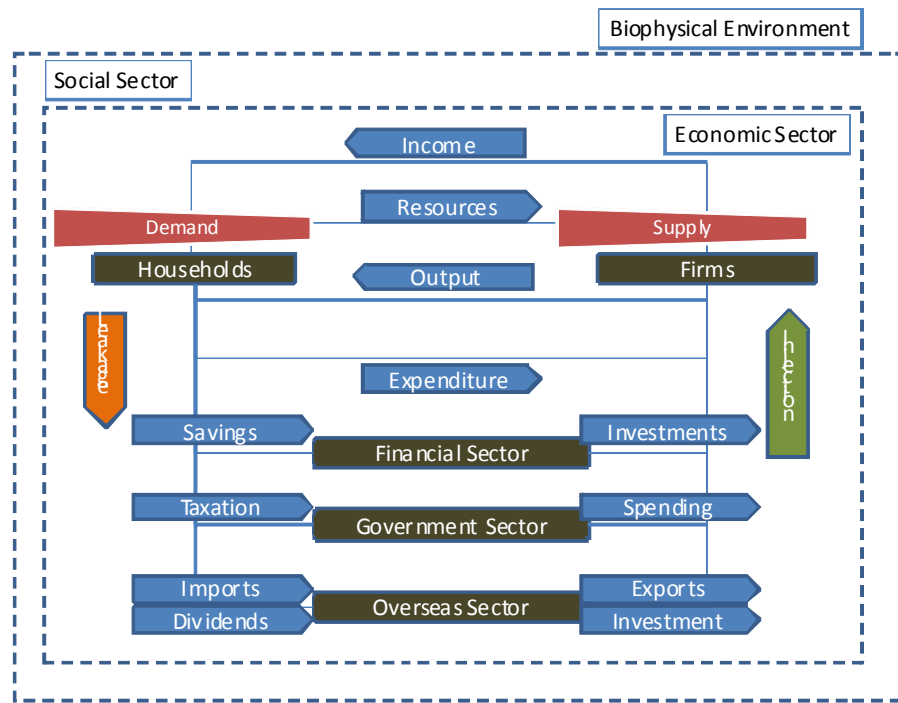
- At steady state mining, Rössing South is likely to yield an EVA of R740.5 million, which will give a direct increase of 5.8% to the Erongo Economy and a 7.9% increase based on indirect and induced multipliers, after provision for leakages.
- However, when we factor in the initial investment and amortise the region's GGP and the mine's EVA, then the total economic wide positive impact is 10.7%, which is very significantly positive.

	2010 est - N\$ m	Over 25 years
Erongo GGP	12 860	321 505
Est Initial Investment		6 500
Potential Economic Value Added	740.5	18 514
% Direct Impact	5.8%	7.8%
Indirect Multiplier	1.13	1.13
Indirect and Induced Multiplier	1.77	1.77
Total Multiplier less leakage	1.38	1.38
Total Impact (GGP '000)	1 021	25 549.
Total Impact %	7.9%	10.7%

Household income and expenditure is generally 66% of the GDP of Namibia and the impacts, as outlined above for GDP, are very similar to the ratios for household expenditure. There will be, without doubt, a strong leakage factor, a quantum that is beyond the scope of an ordinary socio-economic impact assessment. However, many of the mitigation factors discussed in the sections below are with respect to capturing as much of the income as possible.

The positive impacts on an economy have many linkages and we show some of these below.

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 effect of that spending. The impact region is determined by the nature of the project and can be the entire country; or a 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 Rössing South has an impact on the overall economy of Namibia. The flow of the argument is as follows :

- An investment occurs in Rössing South , from either households (private investment), the banking sector (loans) or from the overseas sector (foreign investment);
- 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);
- Through direct and indirect taxes, the Government Sector increases its income and capacity to spend;
- 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.

✓IMPACT ON EMPLOYEE WEALTH CREATION

An often less-noted positive impact is that of employee wealth creation. A recent survey undertaken by us on the labour force of a similar mine in the area, has shown that as much as 70% of a mine's employment comes from other regions, which means not only does one create wealth in a local labour area, but also in hinterlands.

Furthermore, through financial training courses for employees, they learn how to manage their finances more responsibly, e.g. buying their homes, saving in pension funds and other general savings, which leads to creating wealth for the next generation and mitigating against mine-closure.

✓2. ECONOMIC: LABOUR

POTENTIAL IMPACT ON EMPLOYMENT

A key objective for economic development, not just in Namibia, but anywhere in the world, is job creation. Based on an estimate of 1200 jobs created directly, the total induced effect would be a potential 10.5% decrease in unemployed and the economically inactive population.

Erongo	2010
Unemployed and Inactive Employees (estimated)	30000
Estimated new job creation by Swakop Uranium	1200
Reduce due to lack of skills availability	600
% Direct impact	2%
Indirect multiplier	1.23
Indirect and induced multiplier	10.44
Total impact % on unemployed	21%
Net after provision for Leakag	10.5%

When thorough mitigation measures are put in place, as is suggested on page 44 and further, these will lead to strong human resource development and job creation across the mining supply chain.

3. ECONOMIC: GOVERNMENT INCOME

FISCAL IMPACTS

The GRN could potentially increase its income moderately, based on total royalties and taxes payable by Swakop Uranium.

N\$ m	2009
Government Disposable Income	14200
Swakop Uranium income:	
Estimated Royalties	80
Estimated PAYE	112.5
Estimated Company Tax	78.75
Total Government Income	271.25
% Direct Impact	1.9%
Indirect Multiplier	1.13
Indirect and Induced Multiplier	1.77
Total Impact Less Leakage	1.38
Total Impact %	2.6%

✓EXPORTS AND BALANCE OF PAYMENTS

Although foreign exchange and exports are strictly speaking not government income, we include their impact under this heading as Government is the custodian of foreign exchange. As we have pointed out, Namibia is a very open economy and hence it requires FOREX to fund its significant manufactured imports.

From the table below, it can be gleaned that a noteworthy increase can be expected in the balance of payments (earnings of FOREX) of Namibia.

	2009
Namibian Exports (N\$ m)	29 400
Potential Swakop Uranium Exports (N\$ m)	5 000
% Direct Impact	17%
Stock of International Reserves (N\$ m)	13000
% Direct Impacts	38.4%

4. TOURISM, RECREATION AND HERITAGE

× IMPACT ON TOURISM

One of the key concerns from many stakeholders during the EIA Scoping public participation processes, was the issue around the cumulative impact mining may have on tourism. Swakop Uranium lies on the Moon Landscape and Welwitschia Routes, both very popular destinations for nature tourists. The section of the Swakop River between Swakopmund and the Moon Landscape are very popular tourist destinations and an estimated 80% of tour operators derive a living from this natural environment. Typical activities include: weddings, dinners, educational tours, ecotourism experiences and others. It is furthermore expected that the mine's linear developments (roads, railways and others), may impact other surrounding tourism attractions.

From meetings with stakeholders, tourist operators indicated the following concerns:

- The desert will be irrevocably changed, which impacts the experience that tourists are seeking. The key issues for tourist operators are that the very “spirit” of the desert will be impacted by large scale mining development.
- With mining encroachment into the Moon Landscape and related roads, the immediate surrounding area is already compromised.
- Environmental specialists are not independent as they are ultimately paid for by the very mine that is evaluating.
- That a quick field study cannot possibly capture the essence of a desert, and hence Environmental Studies are mostly incomplete;
- That tourism is in fact a young industry that was born out of necessity in the early 1990's when Rossing retrenched employees – it now seems under threat by this very industry.
- The linear infrastructure, such as access roads, power lines, pipelines and others crossing the landscape in separate servitudes will have a much bigger negative impact than anticipated. In this regard, the lower volume, but more exclusive tour operators that focus on the Khan River upstream of the Swakop-Khan are likely to be most impacted by the Husab project.
- It is commented that the big tour busses and self drive tourists are the main visitors at the big Welwitschia that is situated to the south east of the Husab project. Some of the big busses and self drive tourists are finding other sites to visit because of the poor quality of the road that runs from the C28 across the Swakop River and up to the big Welwitschia. It follows that these stakeholders may appreciate a surfaced road that is also used by the Husab project as its main access road.

Moving away from stakeholder concerns, the size impact (the quantum) on the tourism industry is

currently being hotly debated with no definitive answer readily available at present. Based on pure economic sectoral data, it is not easy to ascertain how large Namibia's tourism industry is as tourists spend their 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.

Thus estimating the size of the tourist sector is fraught with difficulties, but a crude measure is simply to take the total of the Erongo hotel and restaurant sector's GGP, which we estimated at N\$ 1 billion in 2009, or 2% of total regional GGP. This would exclude expenditure of tourists on other sectors, eg Transport, Services and Retail. Should one include these, our guestimate is that the upper level of the Tourism GGP contribution would be 4% in the region, as opposed to the mining sector's 30 % of total regional GGP.

However, from an employment and livelihood perspective, tourism has a low cost to create jobs and this sector sustains many lives in the Region. Tourism employment in Erongo is relatively much bigger than the Namibian national average (proportionately three times the size). The mining industry in Namibia had a total 8 000 employees in 2007 nationally and the tourism industry had over 13 000 employees (the SEA put this amount at 18 000), of which we estimate nearly 6 000 worked in Erongo. Thus from a job creation point of view; it confirms that tourism is significant, as 6000 jobs are 20% of the total workforce of Erongo.

Furthermore, as is pointed out in the SEA, "The [tourist] sector has seen significant growth over the past fifteen years, with tourist arrivals increasing more than threefold from 254,978 in 1993 to 833,345 in 2006 (NTB, 2007). The coastal region provides 16% of national bed occupancy (an indicator of tourism popularity). National bed occupancy was 53% in 2008 compared with 63% in Swakopmund and surrounds (HAN, 2008). In a survey conducted by NTB (2006-2007) the most desired destinations in Namibia were Swakopmund (30%), Etosha (27%) and Sossusvlei (16%).

In conclusion, the conflicting need for land-use between tourism and mining development in this case requires further detailed analysis. The core natural tourist environments being impacted, **being the Moon Landscapes, Welwitschias, Khan River areas,** have been identified. In a follow up study, it needs to be determined, quantitatively, what proportion of tourist income may be lost and whether this is significant compared to the benefits of a new uranium mine.

The ideal is co-existing mining and tourism industries and the impact on tourism needs to be managed.

5.ECONOMIC: SUPPLY CHAIN MANAGEMENT

✓IMPACT ON SUPPLIERS

One of the many positive impacts that mines have on local economies is the increase in local procurement and import substitution. A recent study undertaken by Strategy for Good shows that an average sized Uranium mine, such as Swakop Uranium, can easily create the following jobs over and above its direct employment in different regions:

TABLE 4: NEW JOBS CREATED/SUSTAINED

RowLabels	Continuous	Intermittent	Once off Suppliers	Grand Total
Erongo	362	80	25	466

International	2	6	32	41
South Africa	104	31	0	136
Windhoek	157	20	0	177
Grand Total	625	137	58	820

We found that the following procurement opportunities furthermore arise as a result of a Uranium mine's establishment:

TABLE 5: ANNUAL PROCUREMENT BENEFITS TO ECONOMY

VH = Very High, H = High, M = medium	
Industry Benefiting	Rating
Chemicals	VH
Plant and equipment	VH
Fuel	VH
Transport Services	H
Engineering and Metal Services	H
General consumables	H
Construction Services	H
Equipment Services	H
Projects and Consulting	H
Labour Provision Services	H
IT Services	M
Cleaning Services	M
Clearing and Forwarding	M
Electricity	M
Consulting	M
Accommodation	M
Training	M
Travelling	M

6.ECONOMIC DIVERSIFICATION

Economic diversification simply refers to Swakop Uranium's ability to assist the region in diversifying away from its furthering dependency on mining, which is already at 30% and set to rise much higher. We deal with this issue under the mitigation strategies.

7.ECONOMIC REPUTATION

Namibia's economic reputation simply refers to the Government's ability to set and implement fair and consistent rules, and for Swakop Uranium to demonstrate that, through good Corporate Citizenship, it would bolster this reputation.

8.ECONOMIC: CLOSURE

The risk of mine closure, either through structural disruptions in Uranium demand or eventual mine closure through resource depletion, is probably the biggest impact one needs to concern oneself with. It is costly to rehabilitate a mine and to provide wealth for future retrenches, but these issues are the most critical in our view if the Uranium Rush is to leave a positive legacy. We discuss these aspects under the mitigation section.

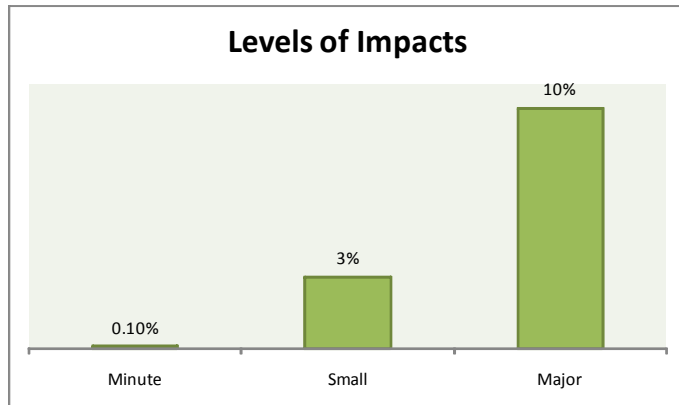
The table below shows that should an average mine closes more than 90% of its employees are still economically active.

Table 6: Typical uranium mine average age at mine closure (Source: Metago Strategy4Good in house experience)

Age:	%
18-30	42%
30-40	37%
40-50	15%
50-60	5%
Over 60	1%
Total	100%

SIGNIFICANCE OF POTENTIAL ECONOMIC IMPACTS

This section poses the question of how significant the Rössing South Seconomic impacts will be once steady state mining is achieved? This aspect does require some qualification, as it should not be over-simplified. Firstly, for the life of mine, Rössing South will create an enormous amount of wealth in the economy, as not purely Economic Value Added (EVA), but also up-



skilling of labour, improvement in roads, infrastructure and many other economic assets, including an increase in savings for old age. A typical example is Johannesburg, or any resource-based city for that matter. The metropolitan areas start off as mining towns but due to the

agglomeration effects mining has over time, cities reach a critical mass and can sustain themselves even though those mines start closing down. There is a tipping point in economies when a region moves out of the dependency on mining, and although this is not the case now for Erongo, with careful economic management, this critical mass is not impossible to achieve.

Using an Occam razor, there are levels of impacts, which is portrayed in this accompanying chart. The first level is in the basis point category, thus it's a fraction of 1%. Hence, in our chart, a 10 basis point is 0.1% impact and this is minute, although never unwelcome. This level of impact frequently occurs in national economies. From here, the next level occurs at around 3-5%, which is often the case of impact in larger towns and cities. The last category of impact is the tens of percentages, a category in which Rössing South falls with regards to its positive economic impacts on Erongo, based on a range of factors. **A category level of 10% increase in an economy is significantly positive.**

To put this in context, recently, economies world-wide declined around 3-5% on average since the global financial crisis, and this cycle has shown how it negatively impacted on happiness, confidence and asset values.

9.SOCIAL COHESION

Social cohesion is about people belonging in a place, and acceptance of immigrants, the opposite to xenophobia. Ostracisation can and does frequently occur where people fear that immigrants are taking their privileges and jobs, and ultimately reducing their quality of life. As people without jobs immigrate into an area, the average GGP per capita reduces in the short term if job creation is not correlated to population growth, meaning poverty increases. Unmanaged, as we have seen the xenophobic attacks in SA, these impacts can be debilitating with respect to social cohesion. In the long term, population growth is in fact good for a region, and if accompanied by increases in productivity, it results in astounding economic growth.

The first issue to consider is how big an impact in-migration is likely to be? If in-migration is miniscule, then social cohesion is not at risk. This is dealt with in the next section.

IMPACT OF POPULATION IN-MIGRATION⁸

The table below shows that as a result of Rössing South's operations, the Erongo population could increase by 8.1%, yet very little is changed in the population density of the region. The actual increase is indeed significant (compare this to a typical 2% population growth year on year in many countries) but due to the vast expanses of land, the population density is hardly changed. However, a more realistic statistic would have been to calculate urban population density, as this would be impacted very negatively (we pointed out that most people live in urban areas in Erongo).

TABLE 7: IN-MIGRATION IMPACT ANALYSIS

Erongo	2010
Population - Erongo (est)	118 137
Increase in people working at mine	600
Add multiplier (10x)	6 000
Dependency Ratio (a high portion of workers are single households)	1.50
Total Potential Population in—migration	9 000
Add Job seekers at 1x	600
Total In-migrants	9 600
% Potential Increase	8.1%
Population Density (persons per km ²) – baseline[1]	1.7
Population Density (persons per km ²) – after impact	1.84

The population density remains very low after the mine has established itself, which means with careful town development planning, the increase in population should not have a major impact on human settlements.

In reality there is very little any authority or any mine can do to stop the tide of in-migration: where there are jobs, the jobless will migrate, and the jobless rate is high throughout Namibia. However, ensuring social coherency is a critical mitigation factor and is discussed below.

A further important consideration is how Swakop Uranium manages informal settlements in its immediate labour areas as this type of resettlement could possibly be directly attributed to its mining development.

However, a 8.1% increase in the population, if not well managed, has the risk of destabilising social cohesion due to the influx of people.

× HOUSING IMPACTS

The Swakop Uranium operations will be based at Rössing South and to our knowledge the nearest Municipality to this site is that of Arandis. The second nearest Municipality is Swakopmund and both these areas have estimated house-pools of 1906 and 7526 respectively.

From the SEA, and interviews with municipal managers and stakeholders, there apparently is a housing shortage in both Municipalities and house prices have increased dramatically in the last few years. This means that accommodation of Swakop Uranium's work force is not going to be

⁸ Namibia = 2.64 per sq km / SA 36 per sq km

inexpensive or easy, as clearly there is a need for housing development to accommodate the influx of people.

Although total employment is set at 1 200 employees, should one assume that 50% will be new migrants to the area (600 workers), then, based on a survey undertaken for a similar mine nearby where 40% are single households and 60% full households, 360 (60% x 600) new homes may have to be found. However, we know that mining has a 10x multiplier/induced impact and if we assume that the economy has spare capacity, then one would have to guess that a further 1080 houses (360 x 5 multiplier x 60%) may be required. Thus economy-wide, as many as 1 440 houses may be needed to accommodate the influx of new workers. .

Using the above numbers, the following demand / supply table can be created based on formal dwellings.

Table 8: ESTIMATED TOTAL houses required in Erongo

	Shacks	Dwel- lings	Tradi- tional	Total	(House- holds)	% Impact on dwellings
Arandis	381	1144	381	1906	1440	125%
Daures	473	1418	473	2364		
Karibib	593	1780	593	2966		
Omaruru	367	1102	367	1837		
Swakopmund	1505	4516	1505	7526	1440	32%
Swakopmund/Arandis		5660			1440	25%
Walvis Bay (rural)	885	2656	885	4426		
Walvis Bay (urban)	1294	3883	1294	6471		
Erongo Wide	5499	16498	5499	27496	1440	9%

Source: 1: MS4G imputed from Erongo regional planning council statistics

There can be no doubt that the impact on housing/accommodation supply will be severe and, if anything the general price level in housing is very likely to continue to rise. In addition to this, should housing and or accommodation not be provided, there will undoubtedly be informal settlement establishments.

10.SOCIAL SERVICES

×IMPACTS ON SOCIAL SERVICES

Social services cover a wide range of activities, from municipal water and sanitation services to protection and security services. We do not calculate the impacts on the whole spectrum simply because on one hand, one tends to become too detailed, and on the other, it becomes mutually inclusive. The three types of social services that we use in this study are municipal services, schools and health facilities. The key question is whether Government has the resources to cope with an anticipated 8.5% influx of people to the region.

×IMPACT ON MUNICIPAL SERVICES AND INCOME

When turning to the Swakopmund Municipality, stakeholders at a recent SEA conference praised this municipality for its excellent service delivery. Based on simple observation of the municipal area, it is clear that services are well provided for. However, it is uncertain whether this municipality will be able to cope financially with a massive influx of people.

Based on its statement of assets and liabilities, this municipality has sufficient reserves to accommodate increases in services in the short term, but as with all organisations, a sudden influx of people potentially brought on by the Uranium Rush, will put strain on its finances.

Thus, one cannot work on the assumption that the municipality can financially accommodate the increase of service provision as a result of the Uranium Rush.

Regarding the municipality's current accounts, we found that in 2008 the Municipality ran at a deficit in terms of its services provision. Most of these losses were as a result of its electricity and water provision services. Although Swakop Uranium will increase the municipal income base, this confirms that this Municipality, based on 2008 statistics, may not have the capacity for any infrastructural development requirements that Swakop Uranium may have.

TABLE 9: SWAKOPMUND MUNICIPALITY INCOME STATEMENT (SOURCE SWAKOPMUND MUNICIPALITY)

	General Income (2008)	Surplus (Deficit) (2008)
SUMMARY : TOTAL	122 974 610.43	-6 329 119.25
Rates & General Services	74 815 029.81	1 633 157.66
Trading (Electricity and Water)	47 577 762.00	-10 956 253.67
Housing	581 818.62	2 993 976.76
TOURISM	9 187 538.13	-1 112 123.49
Bungalows	9 187 538.13	-1 112 123.49
TOTAL	132 162 148.56	-7 441 242.74

SOURCE: 1 SWAKOPMUND MUNICIPAL FINANCIAL STATEMENTS

With respect to Arandis Municipality, we have not had sight of its financial information, but it is not likely to have sufficient resources to cope with large scale infrastructural development.

× IMPACT ON SCHOOLS

The SEA sums up the dire situation concerning school facilities not keeping pace with the growth of the Uranium Rush, and the expectations that communities have of there being better educational outcomes as a result of this growth.

As stated in the SEA, “In-migration has placed considerable pressure on schools and the education authorities in the Erongo Region, especially at the coast. The number of children in school in this region has doubled in the past fifteen years, from 13 789 in 1993 to 28 592 in 2009. No other region in the country has experienced such consistent growth in education demand – above 3% per annum. Although four new schools have been opened in the past five years, bringing the total to 61, the Regional Education Directorate has typically coped with the situation by adding additional classrooms to existing schools. Currently, only one new school is planned (for Walvis Bay). Some schools at the coast now have enrolments in the range of 1,000 – 1,500 learners. Of the 978 teachers in the Erongo Region, 84% have more than two years of tertiary education, much higher than the national average of 77%. Attrition and transfer rates (at 11% and 7% respectively) are however higher than the national rates (9% and 4% respectively).”

The risk of not providing adequate schooling where the perception exists that the Uranium Rush will bring new prosperity, will create a major expectation gap with communities, and as in South Africa, this gap could lead to frustration and, ultimately, civil strife.

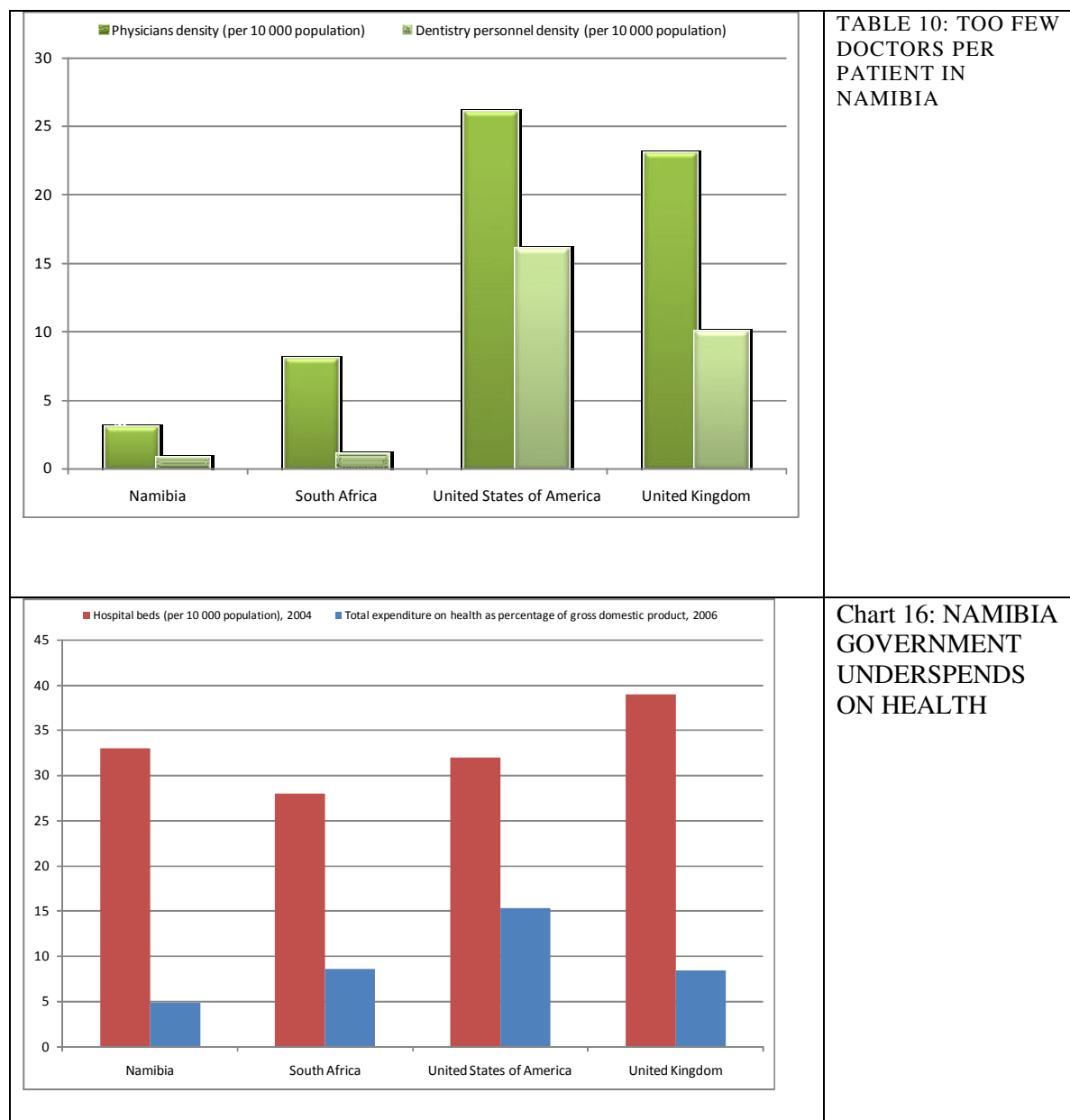
This poses a serious challenge for Swakop Uranium, as it is undoubtedly an agent for influx of people and this will place a further burden of the demand, on educational services in its local areas, particularly Swakopmund and Arandis.

Mitigation measures in this regard are discussed in Section ?? below.

× IMPACT ON HEALTH

The previous theme, namely the under-provision of educational services, is echoed with respect to health services; and hence, this too becomes an impact that Swakop Uranium has to consider. In the graphs below, we can see that Namibia has too few doctors and it under-spends on essential health services.

Our baseline information, unfortunately, is somewhat scant on the extent of health under-servicing, but suffice to say we know that health issues need to be addressed by Swakop Uranium and hence we have built the necessary mitigation measures into our report.



SOURCE: 2 WORLD HEALTH ORGANISATIONS

IMPACT ASSESSMENT METHODOLOGY

PART A: DEFINITION AND CRITERIA*		
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.
	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. 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

SEVERITY - R			SPATIAL SCALE		
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					

PART D: INTERPRETATION OF SIGNIFICANCE	
Significance	Decision guideline
High	It would influence the decision regardless of any possible mitigation.
Medium	It should have an influence on the decision unless it is mitigated.
Low	It will not have an influence on the decision.

*H = high, M= medium and L= low and + denotes a positive impact.

SOCIO-ECONOMIC IMPACTS RATING

SIGNIFICANCE RATING AND MOTIVATION

Theme	Impacts	Severity	Duration	Spatial Extent	Consequence ⁹	Likelihood	Significance	Mitigated
Construction Phase Impacts	1. Accommodation and management of temporary workers	H- 4000 Construction workers are expected during this phase	L App 3 years	L Working on site, living in Swakpmund.	M	H	M-	L-
Economic: GDP and Income	2. Impact On Household Income/GDP	H+ Major increase in GGP and household income expected. More than 7%, which is significant.	M Life of mine, but new skills will go beyond.	H Will be beyond Erongo Borders. Often as much as 70% of semi and unskilled employees repatriate their funds to other areas.	H	H Given strong demand for uranium, very likely.	H+	H+
Economic: Labour	3. Skills Development Opportunities	H+ On condition that Swakop Uranium employs locally, this will be high.	H Life of mine, but new skills will go beyond.	M Mine labour areas.	H	H Same as above.	H+	H+
Economic:	4. Impact On Un-	H+	M	H	H	H	H+	H+

⁹ Derived by formula

Theme	Impacts	Severity	Duration	Spatial Extent	Consequence ⁹	Likelihood	Significance	Mitigated
Labour	employment	With multipliers, major positive impact on unemployment. A 21% reduction is possible.	Life of mine only.	Mine labour areas.		Same as above		
Economic: Government Income	5. Impact On Fiscus	H+ A 3.4% increase is possible.	M Life of mine only.	H Mine labour areas.	H	H	H+	H+
Economic: Government Income	6. Impact On Exports / Forex	H+ A 10% increase in exports is likely. A 34% increase in FOREX at steady state mining is possible, assuming no capital outflows.	M Life of mine only.	H Mine labour areas.	H	H	H+	H+
Tourism, Recreation and Heritage	7. Impact on Tourism Industry ¹⁰	H- According to interviews and the SEA report, a high % of tourism is nature based.	H Beyond life of mine.	M Would have spin-offs to other areas.	H	M	H-	?-
Tourism, Recreation and Heritage	8. Access To The Desert For Recreation By Locals	H- The mine is in very sensitive areas of the Nauklauf Park.	M Life of mine only.	M Mine labour areas.	M	H	H-	M-
Economic: Supply Chain Management	9. Impact On Business Growth	H+ Major multipliers expected	M Life of mine only, potentially beyond.	H Beyond mining border.	H	H	H+	H+

¹⁰ Note, this is a qualitative rating and further specialist studies are suggested.

Theme	Impacts	Severity	Duration	Spatial Extent	Consequence ⁹	Likelihood	Significance	Mitigated
Economic: Supply Chain Management	10.Impact On Import Substitution	H+ Potentially very high.	H Beyond life of mine.	H Beyond mine labour areas.	H	L No real imperative for a mine to do this.	M+	M+
Economic Diversification	11.Non mining industry development	H+ Potentially very high.	M Beyond life of mine.	H Beyond mine labour areas.	H	L No real imperative for a mine to do this.	M+	M+
Economic Reputation	12.Namibia's International Image	H+ Potentially very high.	M Life of mine.	H Beyond mine labour areas.	H	M It is not expected that Swakop Uranium will tarnish country reputation.	H+	H+
Economic: Closure	13.Socio-Economic Mine Closure Impacts	H- Potentially very high.	H Beyond life of mine.	M Beyond mine labour areas.	H	H	H-	M-
Social Cohesion	14.Regional Sport And Cultural Activities	H+ New employees highly likely to participate in sport.	M Life of mine only.	L Mine labour areas.	M	H	M+	H+
Social Cohesion	15.Privacy And Security For Landowners	L-	M	L	L	L	L-	L-
Social Cohesion	16.Mine-Only Townships Or Suburbs	H- Very severe given influx of people.	H Beyond life of mine.	M Mine labour areas.	H	H	H-	L-
Social Cohesion	17.Quality Of Life In Nearby Towns	H- Very severe given influx of people	H Beyond life of mine.	M Mine labour areas.	M	H	H-	M-
Social Cohesion	18.Access To Affordable	H- Very severe given influx of people	M Life of mine	M Mine labour	M	H	H-	H-

Theme	Impacts	Severity	Duration	Spatial Extent	Consequence ⁹	Likelihood	Significance	Mitigated
	Property In Towns		only.	areas.				
Social Services	19.Access To Health Care Facilities	H- Very severe given influx of people	H Beyond life of mine.	M Mine labour areas.	H	H	H-	M-
Social Services	20.Access To Affordable Education	H- Very severe given influx of people	H Beyond life of mine.	M Mine labour areas.	H	H	H-	M-
Social Services	21.Reliable Infrastructure	H- Very severe given influx of people	H Beyond life of mine.	M Mine labour areas.	H	M	H-	M-

MITIGATION AND ENHANCEMENT STRATEGIES

Theme	Impacts	Mitigation/Enhancement
Construction Phase	1. Accommodation and management of temporary workers	<ul style="list-style-type: none"> Construction workers who do not live in the area should be accommodated in a well demarcated and managed accommodation, managed by Swakop Uranium or accountable agent. The accommodation should be compliant with the regulations as outlined in the IFC Performance Standard ¹¹ Appoint a Construction Social Management Team, consisting of camp dwellers, construction management and management. This committee to adopt a code of conduct and enforce same to ensure health and safety to camp dwellers and local residents alike. Liaise with local departments, especially Police, Health and Welfare Services. Manage the potential for unregulated development of sub-contractor or any other groups's work camps. The generation of dust and noise by project vehicles on residents with houses in close proximity to the road need to be closely monitored.
Economic: GDP and Income	2. Impact on household income/GDP	The sum of the economic and labour mitigation and enhancement strategies will ensure this aspect is sustained and improved.
Economic: Labour	3. Skills development opportunities	<ul style="list-style-type: none"> Appoint a Skills Development Facilitator (part of the Human Resource Development Function) to design and manage a skills development program. Make financial provision in the range between 1-3% of payroll per annum for skills development. Strategies for skills development can be in in-house or outsourced, to be decided by Swakop Uranium's management. Emphasis must be placed on Adult Basic Education, ensuring as a minimum functional numeracy and literacy for all its employees. However, as a verifiable objective, an auditor must find at optimal mining that Swakop Uranium has employed most of its unskilled and semi-skilled labour locally and that these inhabitants are receiving training to further their education and

Theme	Impacts	Mitigation/Enhancement
		qualifications.
Economic: Labour	4. Impact On Employment	<ul style="list-style-type: none"> Recruiting locally is essential for poverty alleviation in the region. Swakop Uranium to set up recruitment offices away from its site and ecologically sensitive areas. The mine can decide internally which strategy to follow to recruit locally, but it is suggested that working with the local Dept of Labour, covering labour markets in Walvis Bay, Swakopmund and Arandis are essential. Advertising in local news papers are equally important.
Economic: Government Income	5. Impact On Fiscus	<ul style="list-style-type: none"> Swakop Uranium to act responsibly and pay in accordance with current tax legislation.
Economic: Government Income	6. Impact On Exports / Forex	<ul style="list-style-type: none"> Swakop Uranium to ensure that it complies with all foreign exchange regulations.
Tourism, Recreation and Heritage	7. Impact on Tourism	<ul style="list-style-type: none"> We recommend more detailed research to be undertaken to ensure that the Tourism sector will not be fatally impacted by this mining project.
Tourism, Recreation and Heritage	8. Access To The Desert For Recreation By Locals	<ul style="list-style-type: none"> Popular public recreation areas remain accessible within the current regulatory framework. Swakop Uranium to take cognisance that areas of importance for recreation that are not yet alienated by mining or prospecting, or cease to be, are declared 'no go' for prospecting or mining. Developers (e.g. mining companies) consider public access needs Rossing South project is closed, decommissioned and rehabilitated in such a way that addresses public access needs. Central Namib remains visually attractive Tourists expectations are 'met or exceeded' more than 80% of the time in terms of their visual experience in the central Namib. Areas of significant natural beauty or sense of place are afforded proper protection (without undermining legal rights) Swakop Uranium to attend Minerals committee
9. Economic: Supply Chain Management	10. Impact On Business Growth	<ul style="list-style-type: none"> Swakop Uranium to actively strive to buy from local suppliers.
Economic: Supply Chain Management	11. Impact On Import Substitution	<ul style="list-style-type: none"> Liaise with other mines in the area to determine commonalities of imports and work towards buying from local businesses in order to substitute importation.. Encourage Swakop Uranium's own suppliers to also increase their local content.
Economic Diversification	12. Non mining industry development	<ul style="list-style-type: none"> Contribute to a development foundation to assist local entrepreneurs in starting their own enterprises outside the mining industry.

Theme	Impacts	Mitigation/Enhancement
		<ul style="list-style-type: none"> It is suggested that a type of social entrepreneurship development program be supported with which to provide a structure for this development. It is also suggested that for enterprise development, be it import substitution or social enterprise development, 1% of Earnings Before Interest, Tax, Depreciation and Amortisation be invested in these enterprises.
Economic Reputation	13. Namibia's International Image	<ul style="list-style-type: none"> Swakop Uranium must introduce a system of Governance that is commensurate with international best practices, incorporating a code of conduct and ethical behaviour for all its employees. It also needs to put mechanisms in place to enforce this.
Economic: Closure	14. Socio-Economic Mine Closure Impacts	<ul style="list-style-type: none"> To avoid unnecessary ghost towns, Swakop Uranium needs to put a range of best practices in place for socio-economic mine closure mitigations. Firstly, it needs to be made policy that all employees of the mine and those of its permanent sub-contractors be part of a mandatory pension plan; thus at time of mine-closure, retrenches then have an income from pensions. Secondly, best endeavours must be made for employees to own their own property, which over time is paid off by the employee and prevents homelessness at mine-closure. Thirdly, and very importantly, financial and wealth management edification needs to be provided to all employees. This can be incorporated into normal training programs. Countless surveys amongst unskilled and semi skilled workers have shown that the lack of wealth is highly correlated to a lack of education in managing wealth, perhaps an obvious finding, but profound if mitigated. Towards the last five years before mine closure, the mine needs to undertake re-skilling programs for its employees. Annual retrenchment provisioning for mine closure and regular socio-economic reviews with respect to mine closure is also required.
Social Cohesion	15. Regional Sport And Cultural Activities	<ul style="list-style-type: none"> Encourage employees to actively participate in local sport and cultural activities. If needs be, assist with creation of sport and cultural clubs in established local neighbourhoods, but do not restrict membership to employees only.
Social Cohesion	16. Privacy And Security For Landowners	<ul style="list-style-type: none"> The mining land is on State-owned land and hence this aspect is not expected to have any mitigation measure.
Social Cohesion	17. Mine-Only Townships Or Suburbs	<ul style="list-style-type: none"> Avoid setting up mine only townships. Rather integrate employees into existing communities.
Social Cohesion	18. Quality Of Life In Nearby Towns	<ul style="list-style-type: none"> Swakop Uranium will facilitate / work towards ensuring that: <ul style="list-style-type: none"> Towns are planned and developed in an orderly fashion; Zoning restrictions are respected and upheld to avoid inappropriate and conflicting land use and development;

Theme	Impacts	Mitigation/Enhancement
		<ul style="list-style-type: none"> ○ It observes due process to avoid undue fast-tracking and circumvention; ○ Basic social infrastructure (shops, schools, sports facilities, parks, police, health facilities, ablutions, waste removal, sewerage system) must keep pace with urban expansion; ○ No expansion of informal settlements. • Crime is controlled in its area of control through liaison with Police Services: <ul style="list-style-type: none"> ○ Incidence of murder, theft, drug-trafficking and assault is kept to a minimum; ○ Community crime initiatives (neighbourhood watch, community policing) are strengthened through support from mining companies and their employees.
Social Cohesion	19. Access To Affordable Property In Towns	<p>Swakop Uranium, in conjunction with the relevant Government Departments, will strive to ensure that:</p> <ul style="list-style-type: none"> • Serviced erven are available to its employees; • Employees are able to obtain title to serviced erven; • Housing stock is available for purchase and/or rental in all price categories; <ul style="list-style-type: none"> ○ . • Houses are appropriately designed, professionally built, and structurally sound.
Social Services	20. Access To Health Care Facilities	<ul style="list-style-type: none"> • The mine will provide a clinic at the mine for basic preventative health care, which is very standard in any case. • Swakop Uranium needs to make an assessment of which medical facilities the families of its unskilled and semi-skilled employees will use and needs to assist with seed capital for the upgrade of these facilities to accommodate its employees' needs. •
Social Services	21. Access To Affordable Education	<ul style="list-style-type: none"> • As with health care, the mine needs to assess (on a Pareto basis), where most of its employees' children will be going to school and has to liaise with local government and the Dept of Education to assist with the provision and upgrade of educational facilities. • Any new educational facility must be open to all inhabitants in the labour areas. This does not imply free education or the abandonment of entry regulations, merely that the conditions that apply to mine employees are fairly shared with local inhabitants. •
Social Services	22. Reliable Infrastructure	<ul style="list-style-type: none"> • Swakop Uranium is encouraged to work with local departments to ensure that the quality of community infrastructure, especially roads, is not compromised as a result of usage of such infrastructure.

CONCLUSION

In conclusion, the Erongo region and Namibia is very reliant on investments such as the Rossing South endeavour. With responsible mining and Good Corporate Citizenship, the project on the whole could be very positive for the area.
