Governance implementation for the central Namib Uranium Province: **Strategic Environmental Management Plan**

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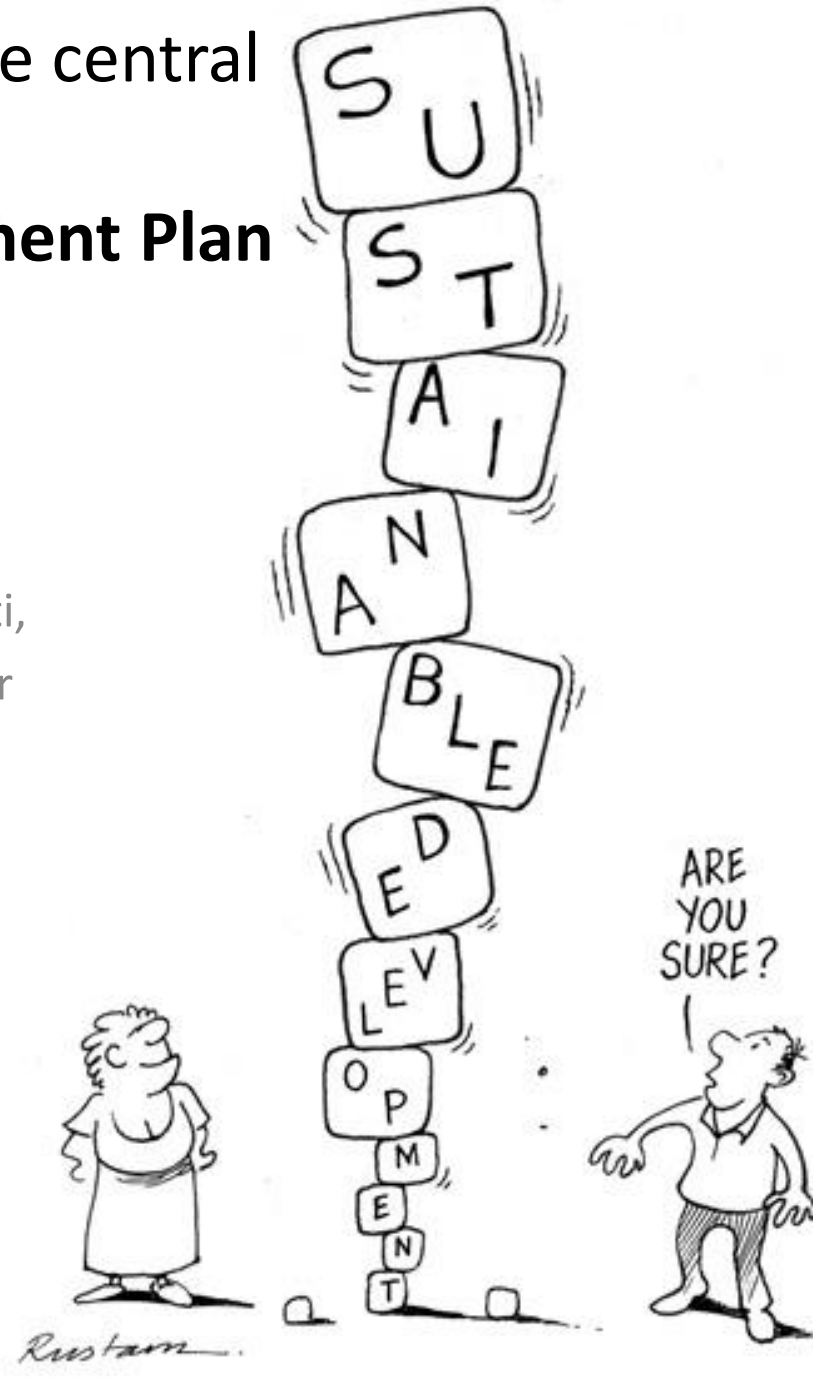
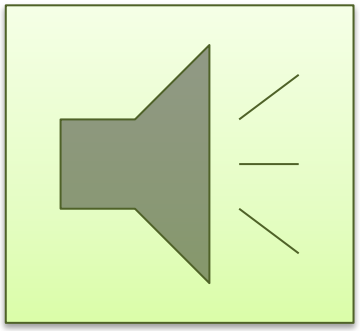
Geological Survey of Namibia



CAAWG7, 3rd-9th November 2014



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SEA and SEMP background

- In 2009 after Government of Namibia put a moratorium on the licensing of uranium exploration and mining,
- The Chamber of Mines of Namibia **(CoM)** initiated a Strategic Environmental Social Economic Assessment **(SEA),**
- The SEA was independently conducted by the Ministry of Mines and Energy **(MME),** Directorate Geological Survey of Namibia **(GSN-DEEG)** and its German Cooperation partner BGR through the Southern African Institute for Environmental Assessment **(SAIEA),**
- First ever SEA & Strategic Environmental Management Plan **(SEMP)** for a mineral province,
- Voluntary SEA: no existing plan on which SEA may focus,
- Integrated SEA: planners, industry and governmental authorities strongly involved in the process .

Key objectives of the Uranium Province SEA

Analyze environmental, economic and social aspects of uranium exploration and mining

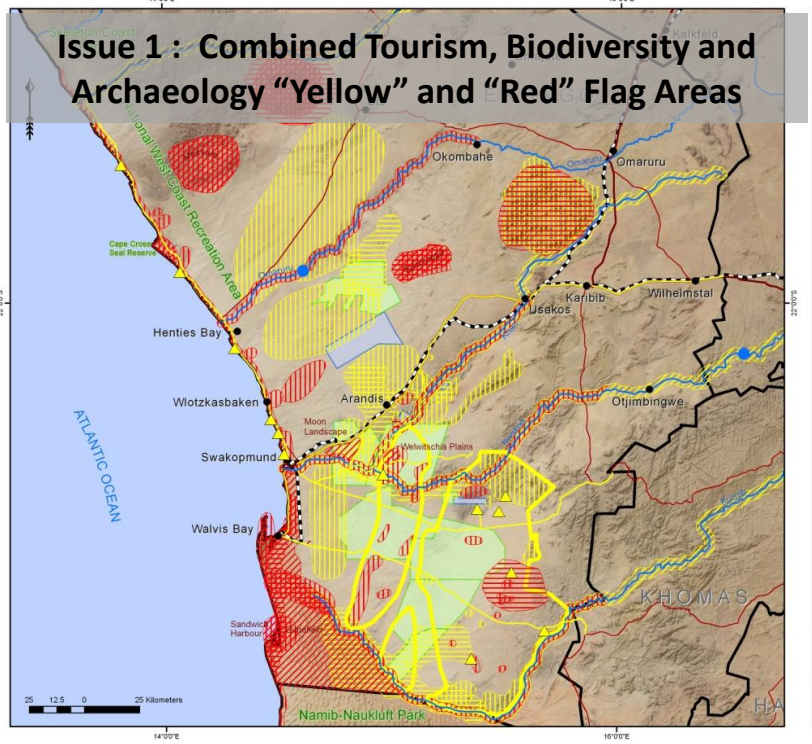
Assess cumulative, synergistic and antagonistic impacts

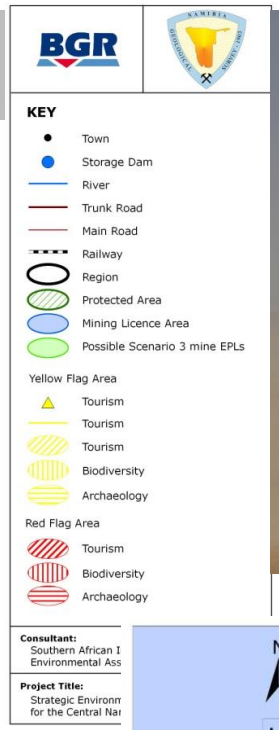
Formulate and balance development options to avoid or minimize negative impacts and to enhance positive impacts

Provide recommendations in the form of a Strategic Environmental Management Plan (SEMP) for sustainable development

Major SEA findings

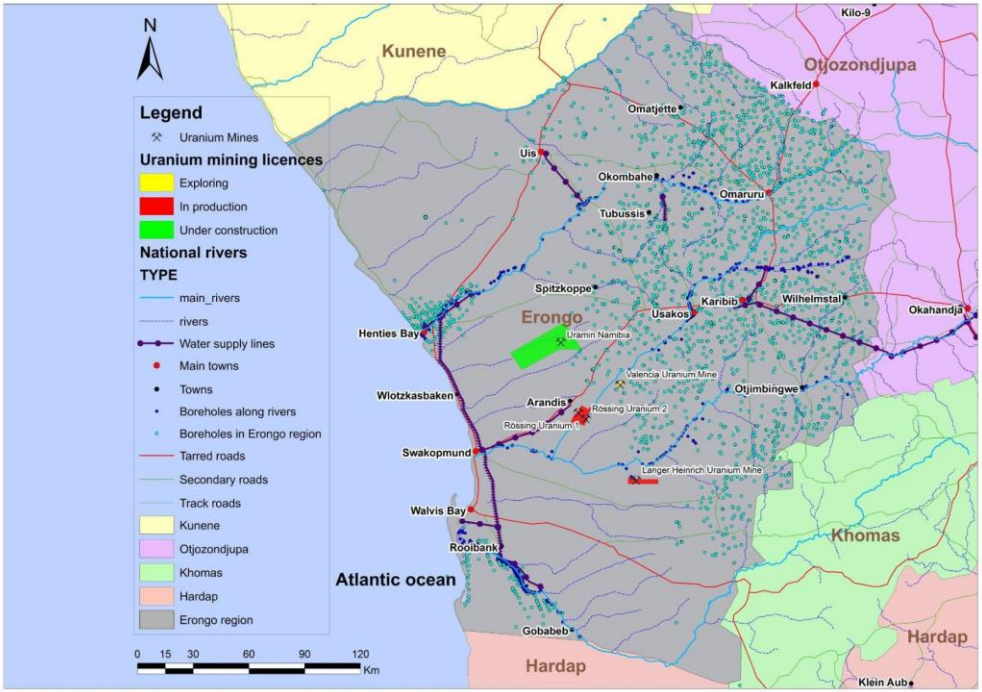
Issue 1 : Combined Tourism, Biodiversity and Archaeology "Yellow" and "Red" Flag Areas





"Red or yellow flag areas should be avoided. If this is not possible offsets must be sought. If an offset is not possible, the no-go option should be explored."

Issue 2: Air quality and radiation



Issue 3: Water

- **Water supply (desalination), distribution, consumption/recycling, groundwater protection and waste water management.**

SEMP Gorvenance

Strategic Environmental Management Plan(SEMP) Steering Committee

Chair: Ministry of Mines and Energy (MME) - geological Survey of Namibia(GSN)
Members: Ministry of Environment and Tourism (MET), Ministry of Agriculture, Water and Forestry (MWAF) Namibian Coast Conservation and Management project(NACOMA), Ministry of Health ans Social Services (MoHSS), National Radiation Protection Authority (NRPA), Uranium Institute (UI), Gobabeb Research and Training Centre, Namibia Ecological Restoration and Monitoring Unit (NERMU), Municipality of Walvis Bay, Coastal Tourism Association of Namibia (CTAN)

SEMP Office(Geological Survey of Namibia)

Task: Secretariat for the SEMP implementation (monitoring, meetings, report)
Advice to MME (Minister, Mining Commissioner, Mineral Prospecting and Mining Rights Committee (MRMRC)) and other organs state on sustainability parameter. Facilitation of dialogue between stakeholders and SEMP SC.

SEMP Team

Working Groups of key persons from SEMP office, Government and Specialists
Tasks: Monitoring, compilation and assessment of information

Regular Monitoring	Regular Consultation	Consultation
Groundwater GSN, (DWA)	**Water Supply** Namwater	**Political decision makers**
Radiation and Air GSN, MoHSS	**Electricity supply** Nampower, ErongoRED, Electricity Control Board (ECB)	**Local experts**
Ecology, Sense of place Gobabeb, NERMU, MET	**Mining and Exploration Companies** Chamber of Mines	**Non-Governmental Organisations**
Tourism Gobabeb, MET, tours and Safari Association (TASA), CTAN	**Transport Infrastructure** Ministry of Works and Transport (MoWT), Road Authority, TransNamib, NamPort	**Civil Society**
Health MoHSS	**Social Infrastructure** Ministry of Education (MoE), Municipalities	**International experts**
Heritage and future Gobabeb, National Heritage Council (NHC)	**Housing Infrastructure** Municipalities	**Regional and urban land use planners**
		Basin Management Committees

SEMP Operational Plan

- **12 Environmental Quality Objectives (EQOs)**:
  - collective proxy for measuring the extent to which the Uranium Mining is moving the Erongo Region towards or away from a desired future state,
  - Each EQOs articulate a specific goal, provide a context, set standards and elaborate on a number of key indicators that need to be monitored,

EQO4	**Water**
	Aims of this EQO: To ensure that the public have the same or better access to water in future as they have currently, and that the integrity of all aquifers remains consistent with the existing natural and operational conditions (baseline). This requires that both the quantity and quality of groundwater are not adversely affected by prospecting and mining activities.
Desired Outcome 4.1	**Water for urban and rural communities is of acceptable quality**
Target 4.1.1	**Uranium Rush does not compromise community access to water of appropriate quality:** • **Urban users** • **Rural communities supplied by DWA** • **Commercial farmers (own supplier)** • **Lower Swakop River small holdings**
Indicator 4.1.1.1	**Aesthetic/physical, inorganic, radio-nuclide and bacteriological determinants conform to minimum required quality as prescribed in the national water quality standards**
Status:	

  - collectively EQOs make up the SEMP which is the framework within which individual projects have to be planned and implemented, and within which a number of institutions have to undertake certain actions,
- **38 desired outcomes**, **46 targets**, and **125 indicators** spread across the EQOs,
- **Goal:** Development and utilization of Namibia´s uranium resources to contribute significantly to the goal of sustainable development for the Erongo Region and Namibia as a whole.

SEMP 12 Environmental Quality Objectives

EQO 5: Air quality and radiation

EQO 6: Health

EQO 8: Ecological Integrity

EQO 4: Water

EQO 7: Effect on Tourism

EQO 3: Infrastructures

EQO 11: Heritage, Archeaology and the future

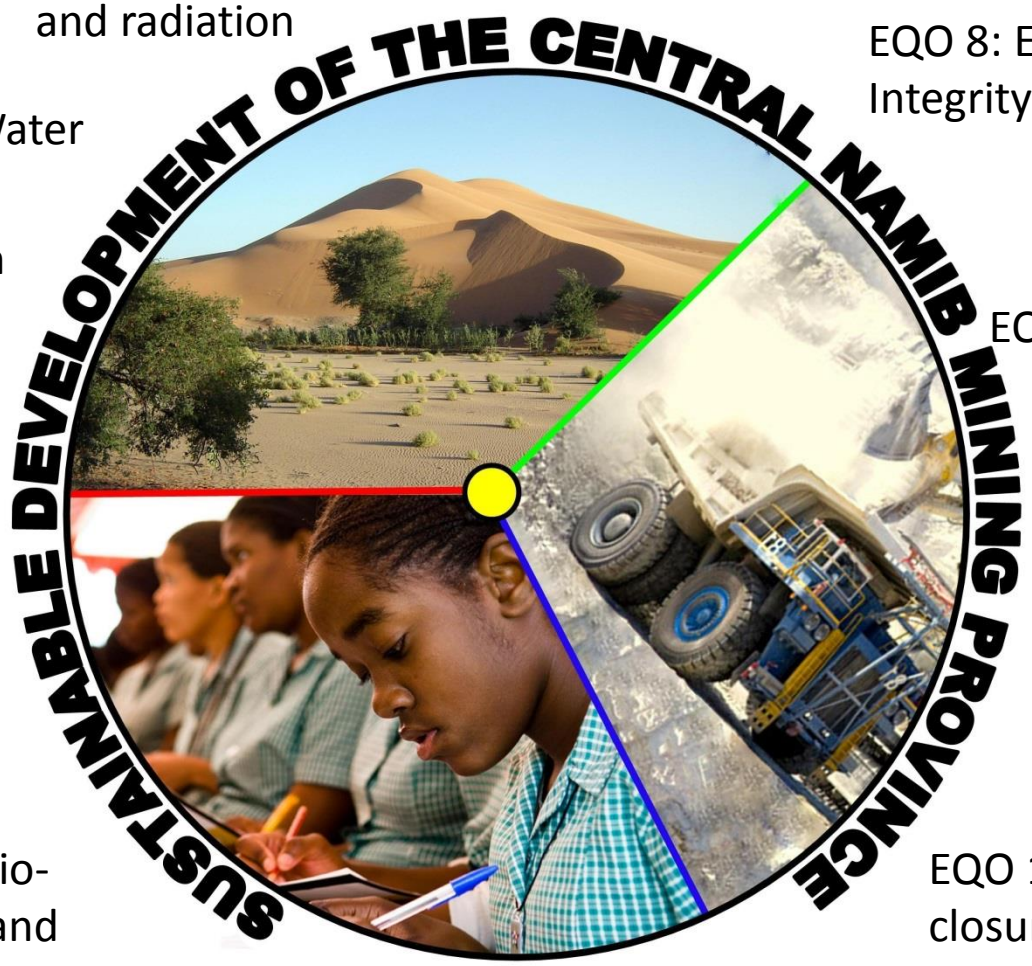
EQO 2: Employment

EQO 9: Education

EQO 1: Socio-economic and development

EQO 12: Mine closure and land use

EQO 10: Governance



SEMP Monitoring Network

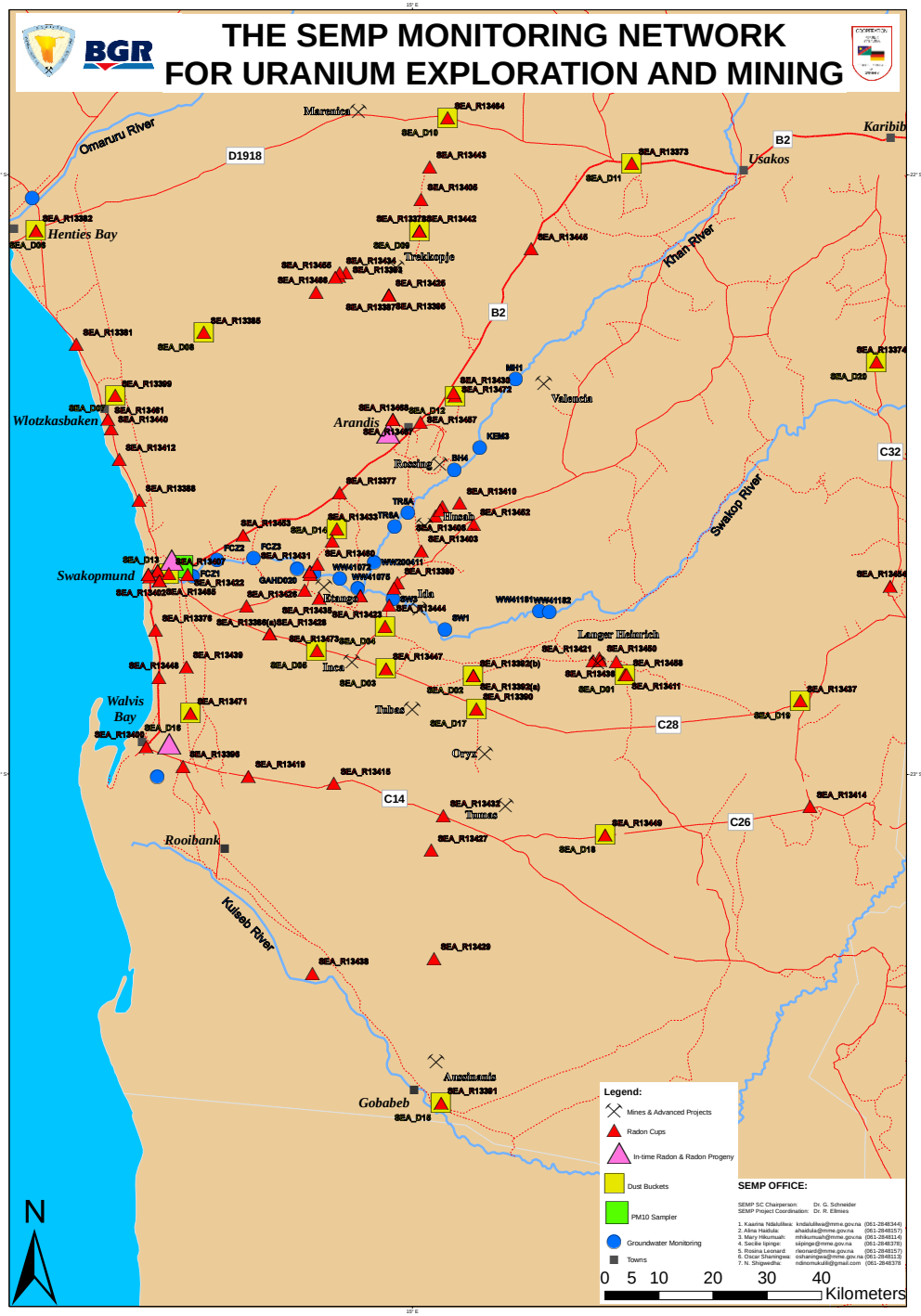
- Radon cups
- Dust buckets
- Ground water
- PM10
- Radon and Radon progeny

Baseline data

Ongoing monitoring

The SEMP office/DEEG and other SEMP working groups

- Secretariat
- Collate data(water, dust, soil, etc…),
- Assess indicators,
- Write annual SEMP report.



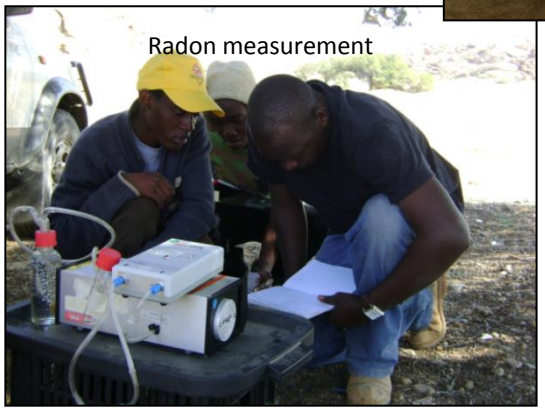

Radon cup

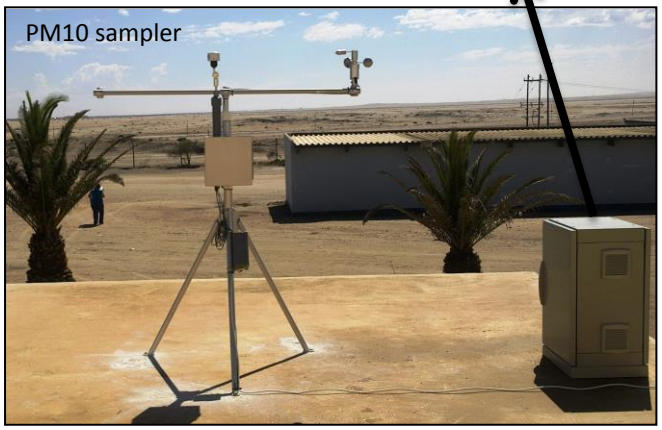

Vegetation restoration


Water sampling

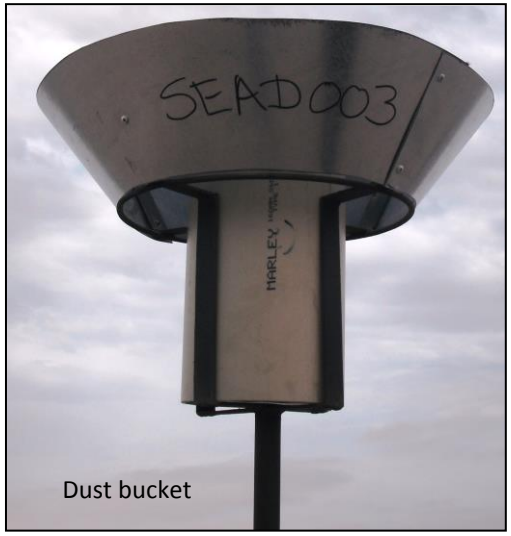

Radon and radon progeny


Ecology and biodiversity mapping


Radon measurement


PM10 sampler


Exploration rehabilitation


SEAD003
Dust bucket


Water sampling

2012 uranium mining and exploration scenario

Namibia's uranium resources of mines and exploration projects. (WNA Market Report, 2013)

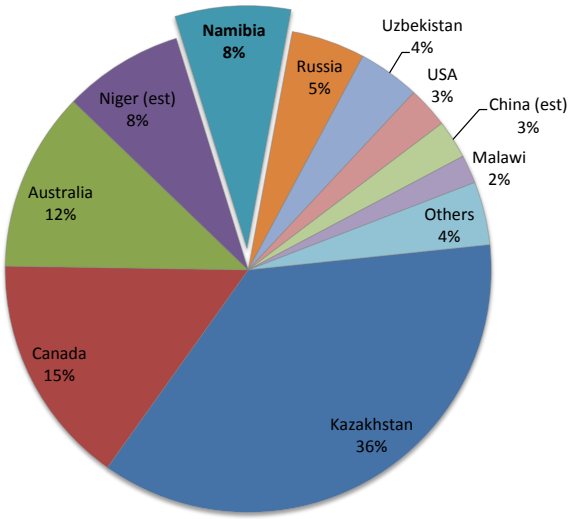
	Deposit type	Known Resources	
		Measured & indicated	Inferred
Rössing	Hard rock	52,700 tU in 0.021% ore**	No data
Langer Heinrich	Palaeochannel	57,500 tU in 0.055% ore	9,200 tU in 0.06% ore
AREVA Trekkopje	Palaeochannel	26,000 tU in <0.011% ore	3,000 tU in 0.01% ore
Swakop Uranium Husab	Hard rock	137,700 tU in 0.039% ore	50,000 tU in 0.029% ore
Valencia-Namibplaas	Hard rock	36,190 tU in 0.015% ore	7,100 tU in 0.014% ore
Bannerman Etango*	Hard rock	57,330 tU in 0.019% ore	24,630 tU in 0.016% ore
Marenica	Palaeochannel & hard rock	2500 tU in 0.010% ore	19,600 tU in 0.008% ore
Reptile Omahola	Hard rock	10,400 tU in 0.036% ore	6950 tU in 0.036% ore
Reptile Tubas-TRS	Aeolian	0	10,900 tU in 0.0125% ore

** In addition to reserves, see table 3 below.
* Reserves are 46,000 tU at 0.0165%U

Namibian uranium production - tonnes U per annum (WNA Market Report, 2013) representing the below expectation Scenario 1

	2008	2009	2010	2011	2012
Rössing	3,449	3,519	3,083	2,641	2,293
Langer Heinrich	919	1,108	1,419	1,437	1,960
Trekkopje	0	0	0	0	251

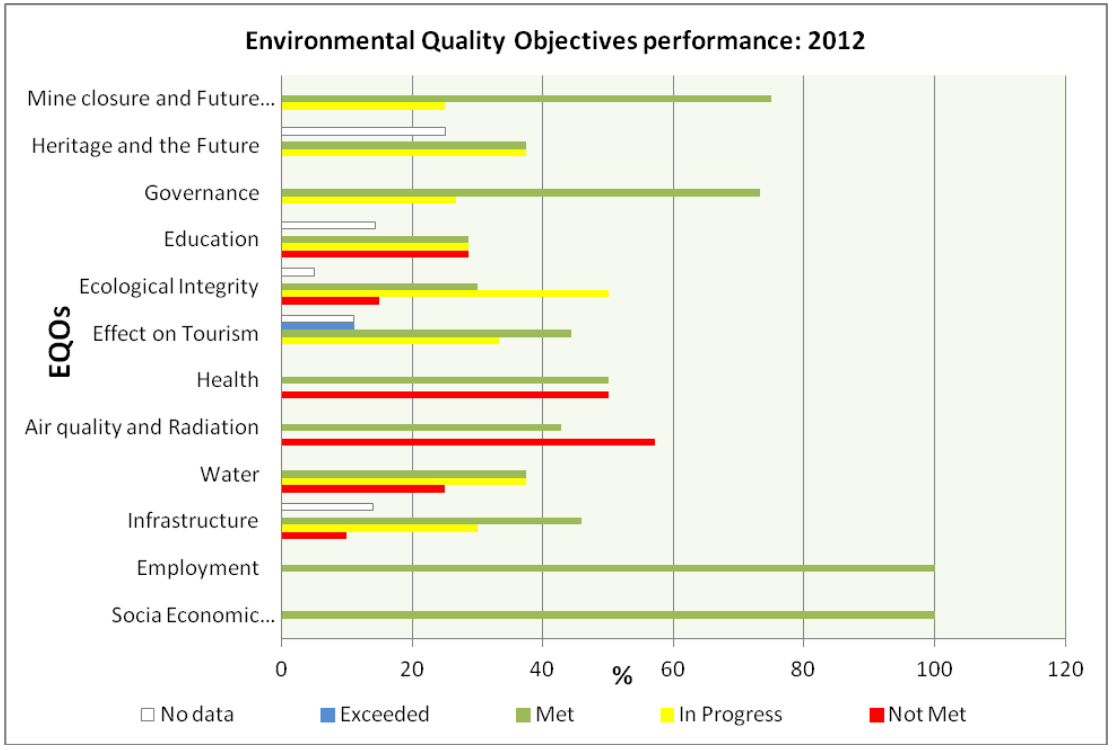
World uranium production in 2012

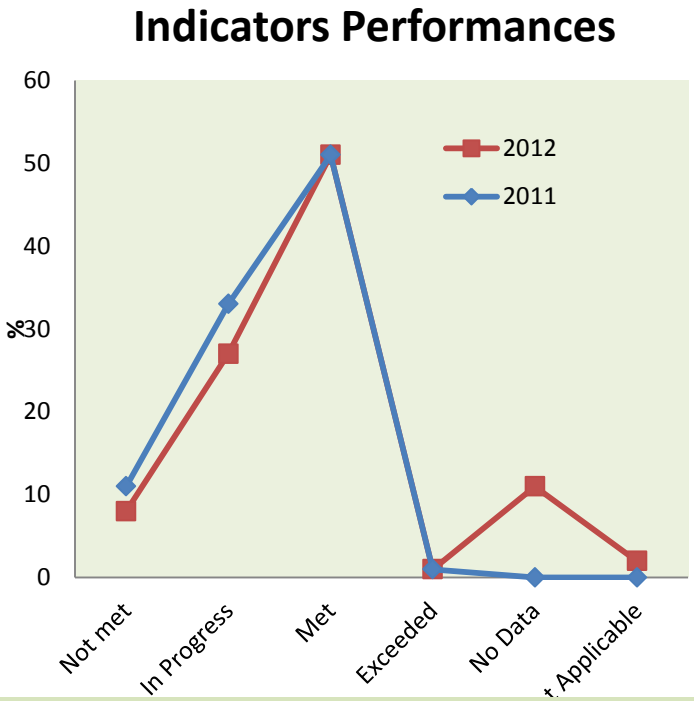


- Effects of the Fukushima tragedy where still being hard felt by the uranium industry (CoM)
- The uranium spot price has declined with the lowest records of U$41.50 a pound observed in Nov 2012

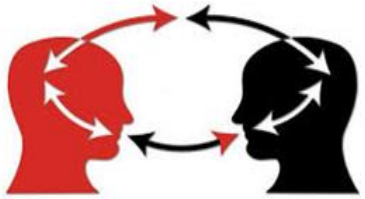
Indicator's performance for 2012

. The 2012 indicators performed as follows.

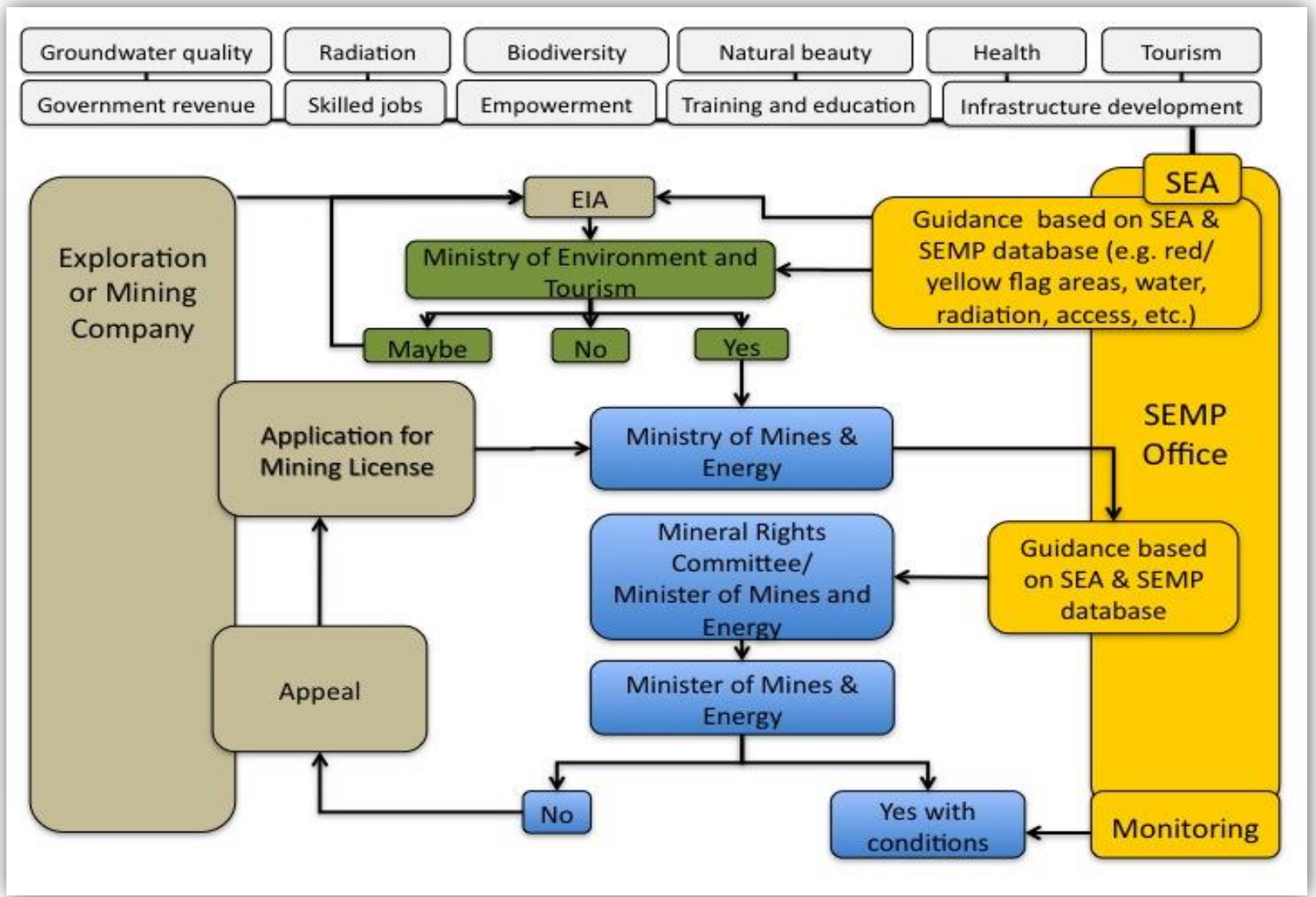




Evidently, mining is associated with positive synergies such as employment, infrastructures and various socio- economic benefits; and negative effects (e.g. air quality and radiation, effect on tourism), Nonetheless, the central Namib still remains a favourable region for tourism and development.

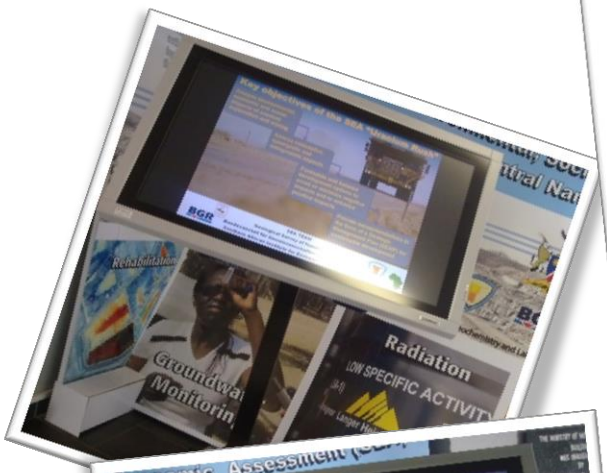


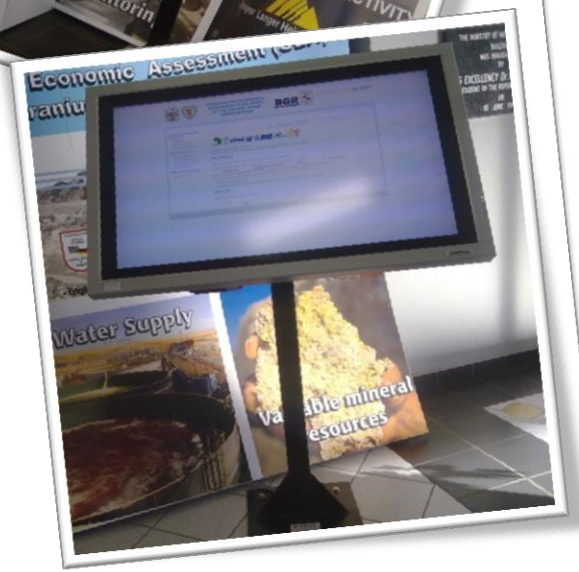
Proposed integration of SEMP OFFICE in Licensing Process



SEMP awareness

- Data and results available to public
  - Touch screens at MME, MAWF and UAN
  - Library
  - SEMP website
  - Roadshows





Conclusion

What is a Mining SEMP good for?

- Implementing Stewardship,
- Clear frame for environmental impact assessment (EIA) based on stakeholder agreed plans (e.g biodiversity red flag areas),
- Acceptance and adoption of a regional integrated land use and conservation planning approach by the mining industry, government and public,
- Communication Strategy: Improved public awareness of the environmental issues and solutions associated with uranium mining in the Namib.

The SEMP recommendations are expected to have a positive influence on the future performance and sustainability of the uranium industry, government, other developers and wellbeing of the public in the Central Namib-Erongo Region.

Thank you

SEMP SC field excursion to Husab Mine, Sept 2014