



# The Namibian uranium mining model.



Namibian  
Uranium  
Association

Voluntary sector initiatives underpinned by a regulatory safety net ensures leading practice and sustainable development in Namibia's "uranium province" best practice.  
Circa 2014.



Source: Wotan Swiegers (2007)

Wotan Swiegers

International Symposium on Uranium Raw Material for the Nuclear Fuel Cycle: Exploration, Mining, Production, Supply and Demand, Economics and Environmental Issues (URAM-2014), 23 -27 June 2014

Axel Tibinyane

# Period 2007-2012

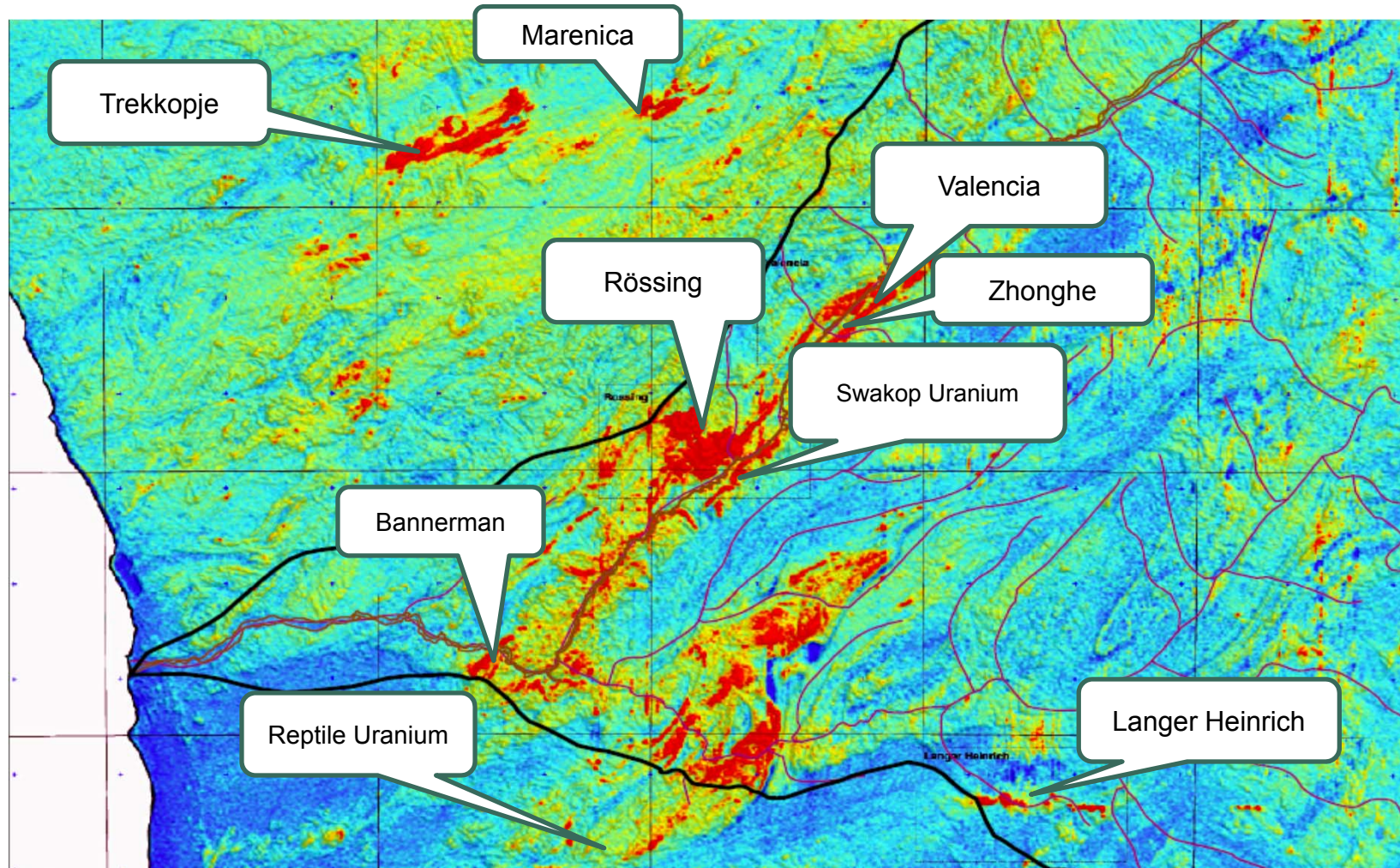
- Namibia has extensive deposits of low-grade uranium and is regarded as a region of global importance for this source of energy.
- Namibia also has a long history of uranium mining, dating back to 1976, when Rio Tinto's Rössing uranium mine opened. In 2007 a second uranium mine was opened, Paladin's Langer Heinrich Mine.
- By the end of 2007, 39 Exclusive Prospecting Licenses (EPLs) and three Exclusive Reconnaissance Licenses (ERLs) had been granted to 21 companies.
- Namibia has a uranium EPL moratorium in place since 2007.



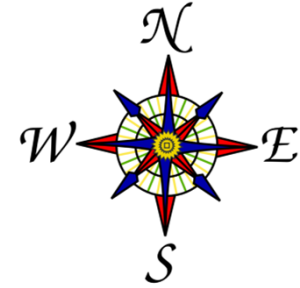




# Erongo Region: Uranium Province



# Major challenges



- Fragmented and Incomplete Legislative Frame work
- Absence of Uniform Minimum Environmental Management Standards
- Mining in Nature Parks
- Huge potential Cumulative Environmental, Social and Health Impacts



**The challenge for the Namibian Government and the uranium industry was to “ create a sustainable uranium mining culture in Namibia and bring all existing and planned Namibian suppliers of uranium up to a certain level of Sustainable Development capability and providing strategic direction for all the different actors involved.”**



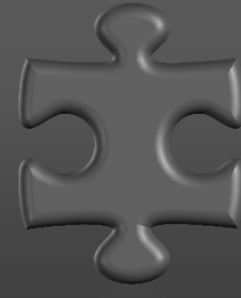
# Cumulative impact

Public concerns regarding cumulative environmental and health effects of uranium mining in Namibia

1. **Power** (generation, distribution, consumption)
2. **Water** (supply, consumption, waste water management, groundwater protection)
3. **Housing** (regional and local town planning)
4. **Social infrastructure** (Health facilities, recreation facilities, schools)
5. **Regional economy** (subcontractors, tourism industry)
6. **Transport** infrastructure,
7. **Ecological sensitivities** of Namib environment
8. **Landscape integrity** of Namib Naukluft National Park and Erongo region
9. **Mine closure and rehabilitation**



Source: Terra MODIS, NASA Goddard Space Flight Center (2007)



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## Point 1

**WNA**

- Through its membership, the uranium industry turned to the WNA for assistance and adopted the WNA policy document **“Sustaining Global Best-Practices in Uranium Mining and Processing: Principles for Managing Radiation, Health and Safety, Waste and the Environment”** as an official guiding document in January 2008.
- This policy covers aspects of Sustainable Development, Uranium Stewardship and Corporate Social Responsibility (CSR) and endorses the WNA Charter of Ethics and the ICMM Sustainable Development Principles.

## Point 2

**Namibian Stock exchange (NSX)**

- A significant milestone was achieved in 2008 when **the Namibian Stock exchange (NSX)** agreed that uranium exploration and mining companies would not be listed on the NSX unless they were good standing members of the Chamber of Mines of Namibia.
- All Chamber members are bound by the constitution and the **Chamber’s Code of Conduct** that commits them to ensuring the highest standards of environmental and radiation safety management.

## Point 3

**The Uranium Institute (UI)**

- The uranium industry established the Uranium Institute (UI) in the coastal town of Swakopmund (the main base of operations for most uranium companies) at the end of 2009.
- **The UI aims to promote and protect the Namibian Uranium brand and co-ordinate occupational health, radiological safety/security and environmental management issues.**

## Point 4

**The Strategic Environmental Assessment (SEA)**

- The assessment of combined impacts of multiple operations was urgently needed.
- The UI initiated with the **Ministry of Mines and Energy (MME)**, in co-operation with the **German Federal Institute for Geosciences and Mineral Resources (BGR)**, the world’s first strategic environmental assessment (SEA) for a mining area.



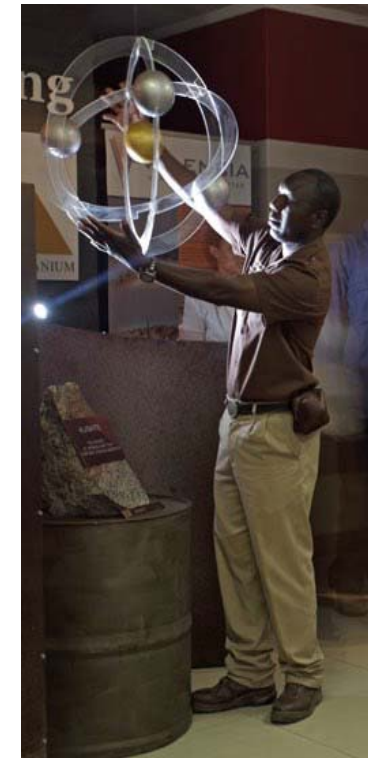
# Namibian Uranium Institute (NUI)



## ***Mission Statement:***

*To promote education, research and collaboration on issues related to uranium exploration and mining in Namibia.*



- 1. Uranium Information Centre:**  
Ensure effective communication, advocacy and correct information dissemination for and about the Namibian Uranium Industry
- 2. Uranium Training Centre:**  
Ensure coordination and implementation of accredited Health, Environment and Radiation Safety and Security Standards and training courses for the Uranium Industry
- 3. Occupational Medical Centre:**  
Coordinate and ensure best practises in Occupational health care





# Communication

[www.namibianuranium.org](http://www.namibianuranium.org)



"We build too many walls and not enough bridges"  
Sir Isaac Newton


Welcome to the meeting of the **Isaac Newton Forum**, an initiative by the Scientific Committee of the **Namibian Uranium Institute (NUI)** to stimulate debate and to built bridges between people.

Scientific Committee: Dr W Swiegers, Dr D von Oertzen, Prof G Obermair, Mr. R Schneeweiss, Prof S Moyo, Mr. E Müller, Prof C von Garnier.




"WHEN WAS THE LAST TIME YOU SAW A DOCUMENTARY THAT FUNDAMENTALLY CHANGED THE WAY YOU THINK?"  
OWEN GLEIBERMAN, ENTERTAINMENT WEEKLY

The Namibian Uranium Institute cordially invites you to the screening of the award-winning documentary *Pandora's Promise*:



WHAT IF THE CLUBE COULD POWER YOUR ENTIRE LIFE?



FROM SCIENTIST AND FUTURE DIRECTOR ROBERT BROWN

## PANDORA'S PROMISE

AT THE BOTTOM OF THE BOX SHE FOUND HOPE

When: Thursday, 19th June 2014  
Where: Atlanta Cinema, Swakopmund  
Time: 18h00  
Admission: Free of Charge (open to the public)

Bookings can be made with Ailly or Monika at 064 402 393 or via e-mail at [info@namibianuranium.org](mailto:info@namibianuranium.org)





# Training

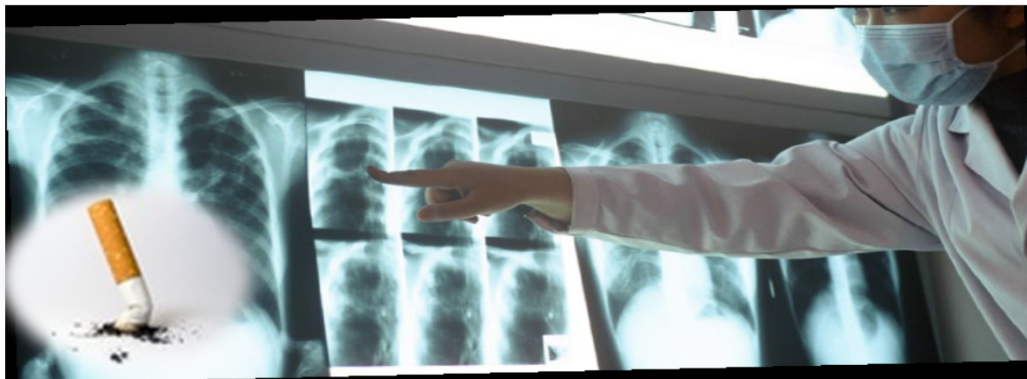
- Training is a kind of magic and at its core the NUI is a teaching facility.
- Lectures are presented by independent PhD level experts in the field of Health, Environment and Radiation Safety and Security.
- The NUI is officially registered with the Ministry of Labour and Social Welfare as an Authorized Inspection Authority (AIA) for competencies in **Health, Environment and Radiation Safety and Security.**



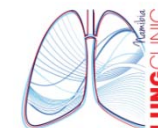
# Health and Safety

The reduction of risk factors is the scientific basis for primary prevention.

- The uranium industry has taken to heart a simple but enduring principle: those who create risk are best placed to control that risk.
- The NUA is playing a leading role in implementing best practice standards and to co-ordinate occupational health, radiological safety and environmental management issues.
- Occupational medical programmes are in place at all mine sites to ensure that all employees are fit to perform their work safely. The ultimate aim is zero accident, incidents or occupational diseases
- The NUA supports independent medical evaluation of employees and ex-employees
- **A industry wide international HIA is currently underway.**



The Namibian Lung Clinic is an example of a “smart partnership” between the University of Bern, the Dr Paul Coulson Foundation, the Polytechnic of Namibia and Erongo Medical Services. The Namibian Lung Clinic (NLC) provides independent specialist consultation and evaluation of patients.





# Corporate Social Responsibility (CSR)

- It is the NUA's mission to support and expand the growing recognition that mining cannot move forward without embracing social and ecological best practices.
- Therefore the NUA accepts corporate social responsibility as a core business interest and not as a philanthropic corporate commitment.
- The NUA partnered with the EDF, a Foundation which was to create an efficient conduit for channelling donor funding to address poverty in Erongo Region.



## Erongo Development Foundation (EDF)



**The key characteristic of the Foundation is the nurturing of a caring society (Ubuntu) by facilitating investments in socio-economic projects.**

# Mine Closure

- The Chamber of Mines Rehabilitation and Closure Committee produced a document known as the Namibian Mine Closure Framework (NMCF).
- The purpose of this document is to provide guidance for the Namibian mining industry in how to develop relevant, practical and cost effective closure plans and to lay down minimum requirements for the members of the CoM of Namibia.
- Both Rössing and Langer Heinrich have developed Mine Closure Strategies and Mine Closure Plans on the basis of the NMCF.





# Key objectives of the SEA “Uranium Rush”

Analyse 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 Management Plan (SEMP) for sustainable development



Namibian  
Uranium  
Association



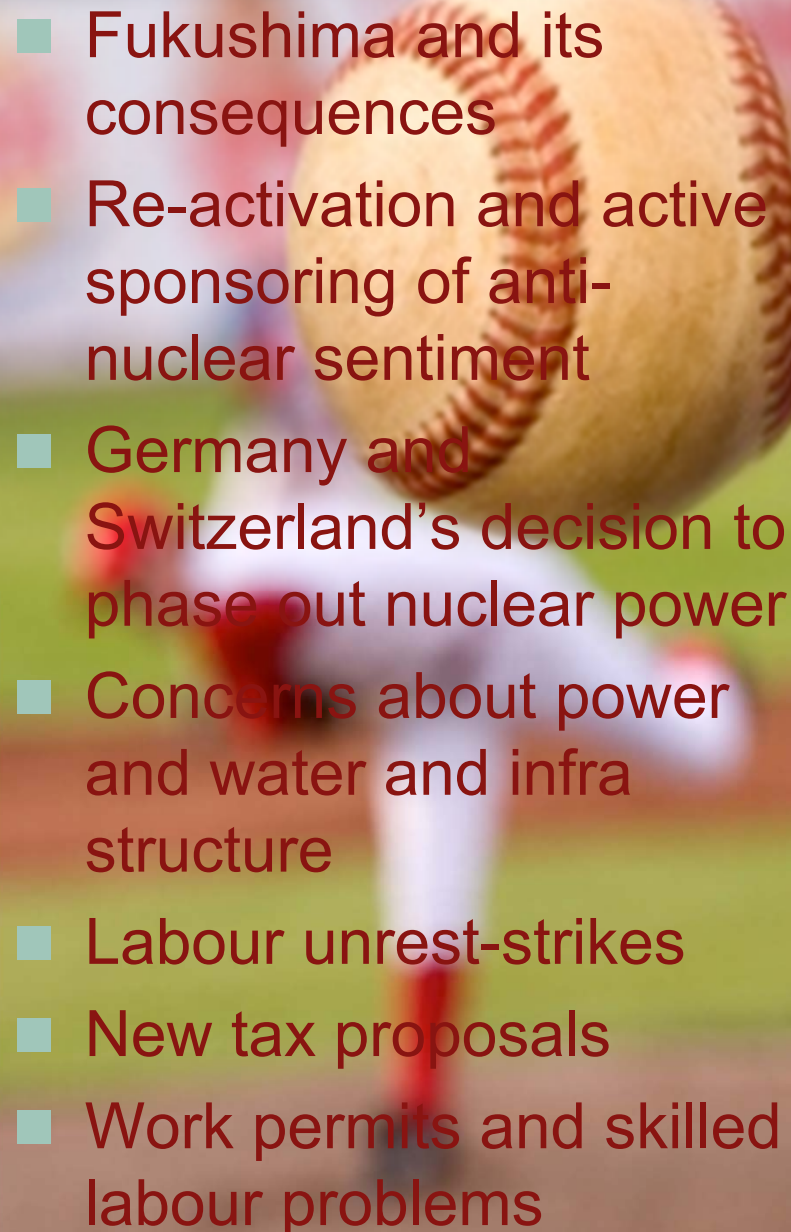
**SEA TEAM**

**Geological Survey of Namibia (GSN)**

**Bundesanstalt für Geowissenschaften und Rohstoffe (BGR)**

**Southern African Institute for Environmental Assessment**



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- Fukushima and its consequences
  - Re-activation and active sponsoring of anti-nuclear sentiment
  - Germany and Switzerland's decision to phase out nuclear power
  - Concerns about power and water and infra structure
  - Labour unrest-strikes
  - New tax proposals
  - Work permits and skilled labour problems

## Period 2012-2014

- Namibia is now party to the Nuclear Non-Proliferation Treaty and has had a comprehensive safeguards agreement in force since 1998 and in 2012 ratified the Additional Protocol and the Pelindaba Agreement.
- There is strong government support for expanding uranium mining, which is regulated under the Minerals Act of 1992, the Atomic Energy Act 2005, Environmental Management Act 2007 and others.
- An Atomic Energy Board has been established along with a National Radiation Protection Authority.
- Finland's Radiation & Nuclear Safety Authority (STUK) assisted the Namibian authorities to develop a Nuclear Fuel Cycle Policy to ensure a safeguards and non-proliferation regime.
- A significant advance was made with the appointment of an Environmental Commissioner to ensure environmental sustainability.

**In 2013 the Sustainable Development Advisory Council was appointed under the Environment Management Act, which is administered by the Ministry of Environment & Tourism. It is tasked to strike a balance between the country's development and environmental protection. It needs to mobilise resources and guide policy formulation to achieve strategic development objectives and goals as outlined in the fourth National Development Plan (NDP4) and Vision 2030 respectively.**



# Namibian Legislation and Regulation (selected legislation only)

- **The Minerals (Prospecting and Mining) Act** provides for the reconnaissance, prospecting and mining for, and disposal of, and the exercise of control over, minerals in Namibia.
- **The Environmental Management Act** promote the sustainable management of the environment and the use of natural resources by establishing principles for decision making on matters affecting the environment; to provide for a process of assessment and control of activities which may have significant effects on the environment;
- **The Atomic Energy and Radiation Protection Act** provides for the protection of people and environment against the harmful effect of radiation by controlling, monitoring and regulating activities involving radiation and sources, radioactive and nuclear material.



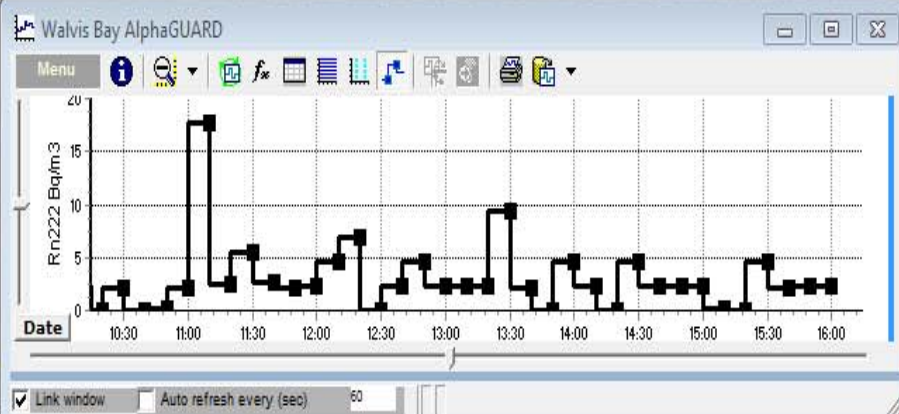
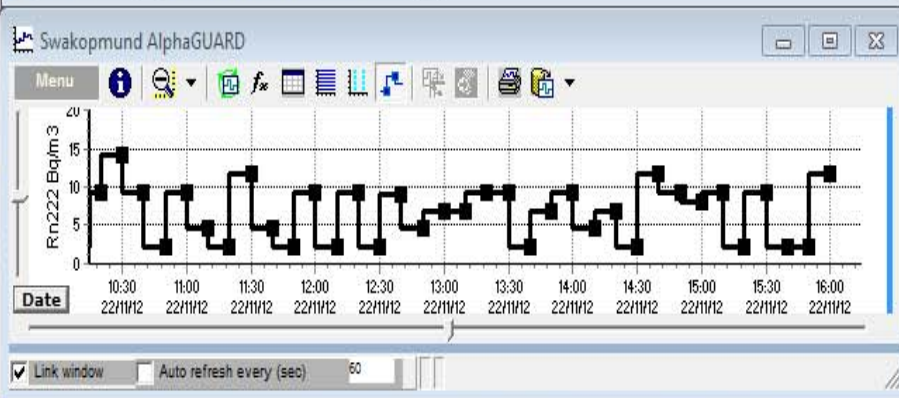
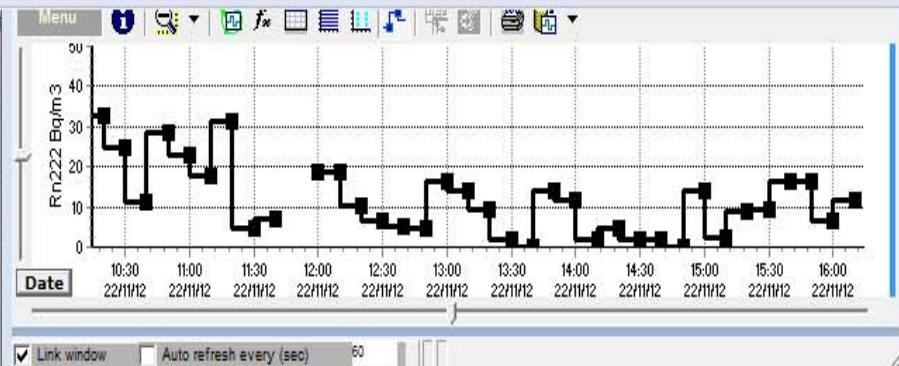
- Nuclear alarms
- Technical Alarms and Events

### Alarms

Event	A	Measured	Point

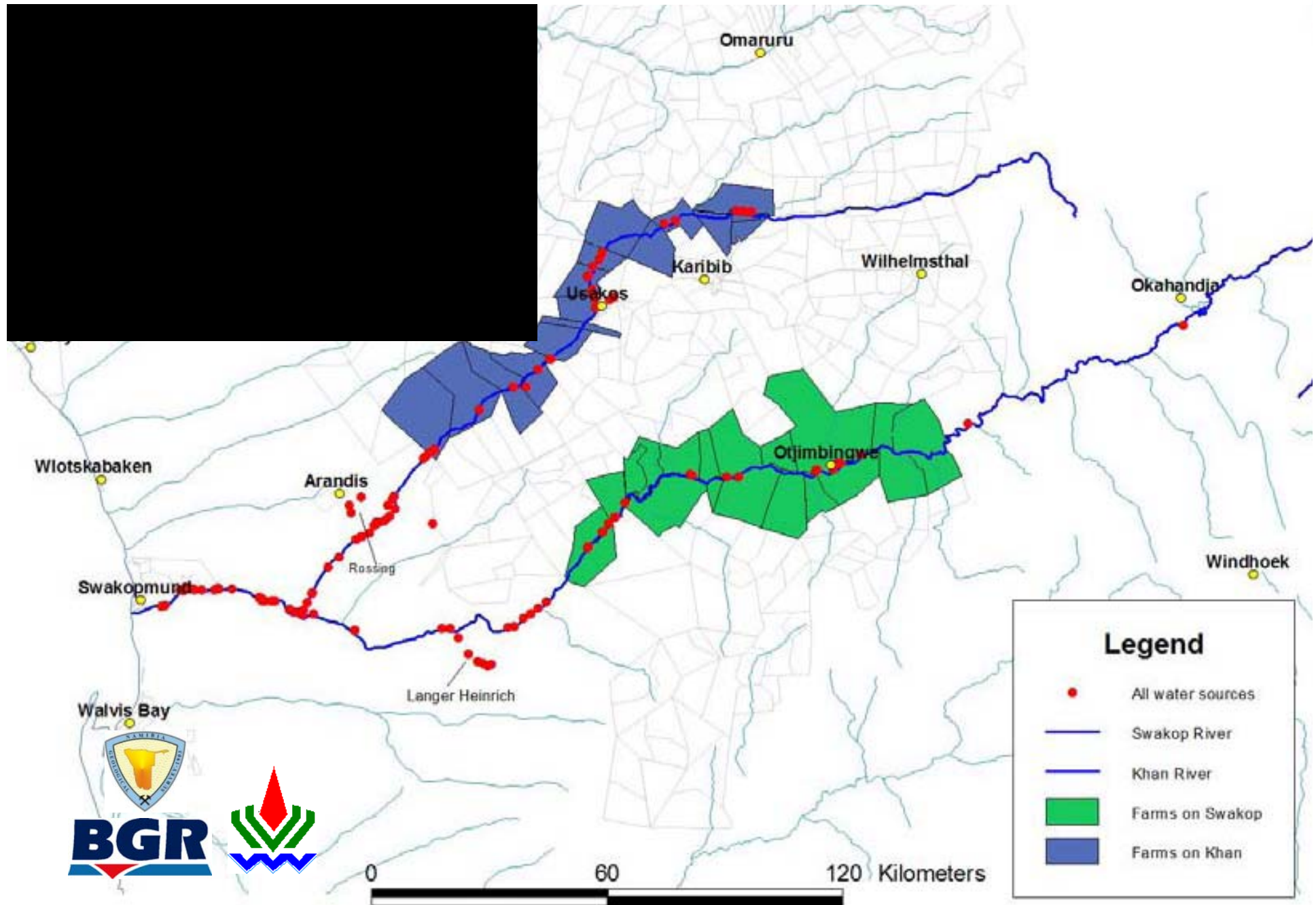


# Air quality Monitoring WG





# ampling locations along the alluvial aquifers of Swakop and Khan rivers

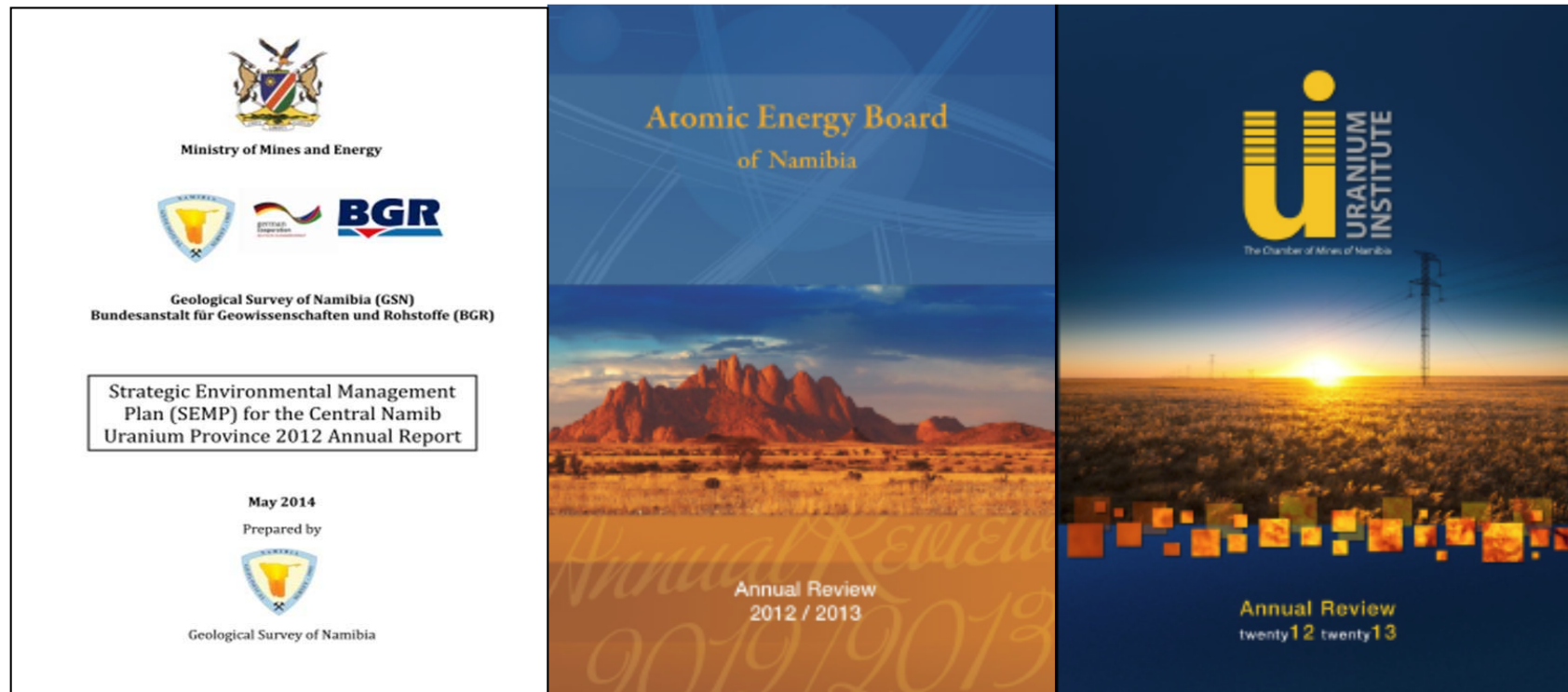


# Reporting



Annual reports are prepared for regulatory authorities:

- Radiation protection and occupational hygiene
- Environment





# Auditing

- 1. Inspections are carried out by the National Radiation Protection Authority (NRPA) and by inspectors of the Ministry of Labour (Labour Act: Health and Safety Regulations)
- 2. Audits
  - ✓ 1st Party Audits (Internal)
  - ✓ 2nd Party Audits ( Business Conformance Audits)
  - ✓ 3rd Party Audits (External by accredited assessors) ISO14001
- 3. Open house, Public meetings & Stakeholder reports
- 4. **Annual SEMP report**
- **Internationally Standardized Reporting (Checklist) on the Sustainable Development Performance of Uranium Mining and Processing Sites**



# The Strategic Environmental Management Plan (SEMP) report

- The **SEMP Report** is the primary mirror in which the industry and our society can view impacts on the environment and adjust practices accordingly.
- The SEMP office is embedded in the MME



## The Namib Environmental Restoration and Monitoring Unit (NERMU)

**NERMU was established to function as a key monitoring agent for the SEMP, to drive restoration research and implementation and to develop skills in critical environmental management-related fields. The Ministry of Mines and Energy (MME) worked with their German Partners to secure funding for this unit, which led to the establishment of NERMU at Gobabeb. The German Federal Ministry for Economic Cooperation and Development, through the Technical Cooperation Project between the German Federal Institute for Geosciences and Natural Resources (BGR) and the Geological Survey of Namibia (GSN), provided seed funding in 2011 and awarded a grant for 2012-2014.**



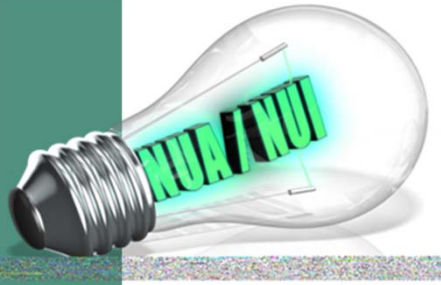
# Regulatory Framework

- Constitution of Namibia
  - Atomic Energy Act
    - Labour Act
- Environmental Management Act
  - Minerals Act

## National Regulations and Guidelines & SEMP

### EMP & RMP and Code of Practices

**Success depends on implementation  
by competent operators ( NUA & NUI -  
Uranium Stewardship)**



# The U-Industry- post Fukushima

**“We are not in the mining  
business, we are in the  
uranium business”  
John Borshoff-Paladin**

- The shape of the local industry in Namibia is still in a **state of flux**, with existing operations and potential projects under severe economic pressure, whilst others are moving from exploration to start up.
- Post Fukushima, the broader uranium mining industry is facing **increasing expectations** from governments and communities regarding safety, occupational health and corporate social responsibility obligations.
- The Chamber of Mines’ uranium committee was morphed in 2013 into the **Namibian Uranium Association (NUA)** as the representative point of contact for the Namibian uranium industry.
- The Uranium Institute was renamed as the **Namibian Uranium Institute’s (NUI)** to align it with the Government’s vision in terms of national training and occupational health service delivery.
- The NUI is developing close academic ties with the **Namibian University for Science and Technology** and the Government’s new **Namibian Energy Institute (NEI)** and the proposed **National Institute for Occupational Health (NIOH)**.





**Namibia is a Member State  
Namibia ratified the NPT  
& Additional Protocol  
& Pelindaba Treaty**



**MME**

**MHSS**

**SD Council**

**AEB**

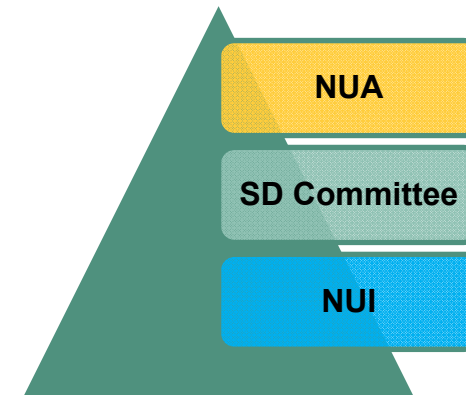
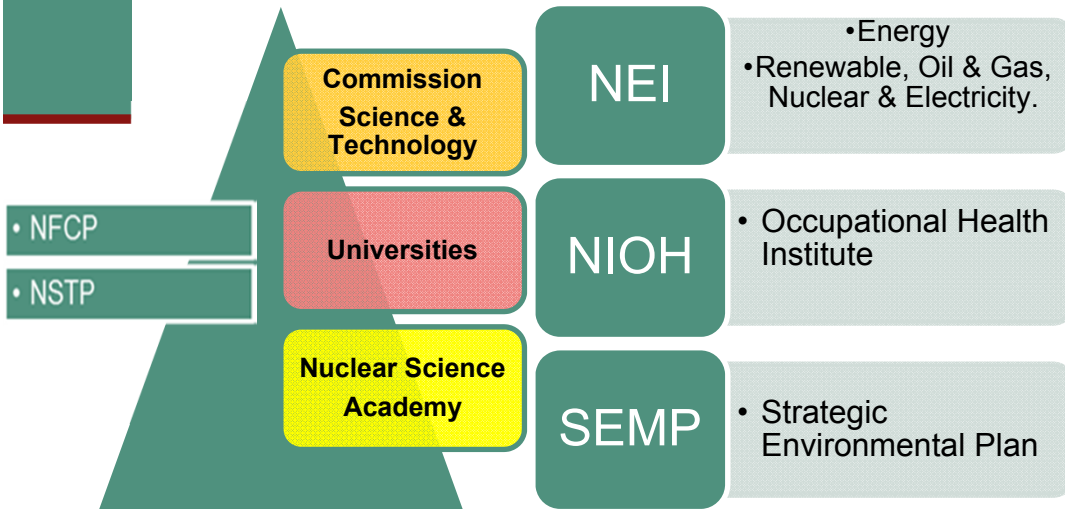
**MLS**

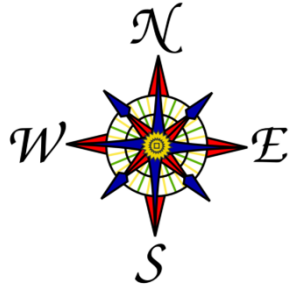
**MFA**

**Environmental  
Commissioner**

**NRPA**

**Constitutional Directive, Atomic Energy & Radiation  
Protection Act & Regulations; Environmental  
Management Act & Regulations, Minerals Act &  
Labour Act & Regulations; **COID****





# Conclusion

- Namibia wishes to be a world class producer of Uranium and a prosperous country to achieve the Nation's 2030 Vision
- The Government and the Uranium Industry formed a Smart Partnership to protect our 'Brand'.
- The Government and the Uranium Industry are committed to implement 'world best practices'.
- Namibia will be guided by the IAEA and the WNA.

[www.aeofnamibia.org](http://www.aeofnamibia.org)

[www.namibianuranium.org](http://www.namibianuranium.org)

