Social Licensing in uranium mining:

Experiences from the IAEA review of planned Mukju River Uranium Project, Tanzania

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URAM 2014 Conference - Vienna, June 2014

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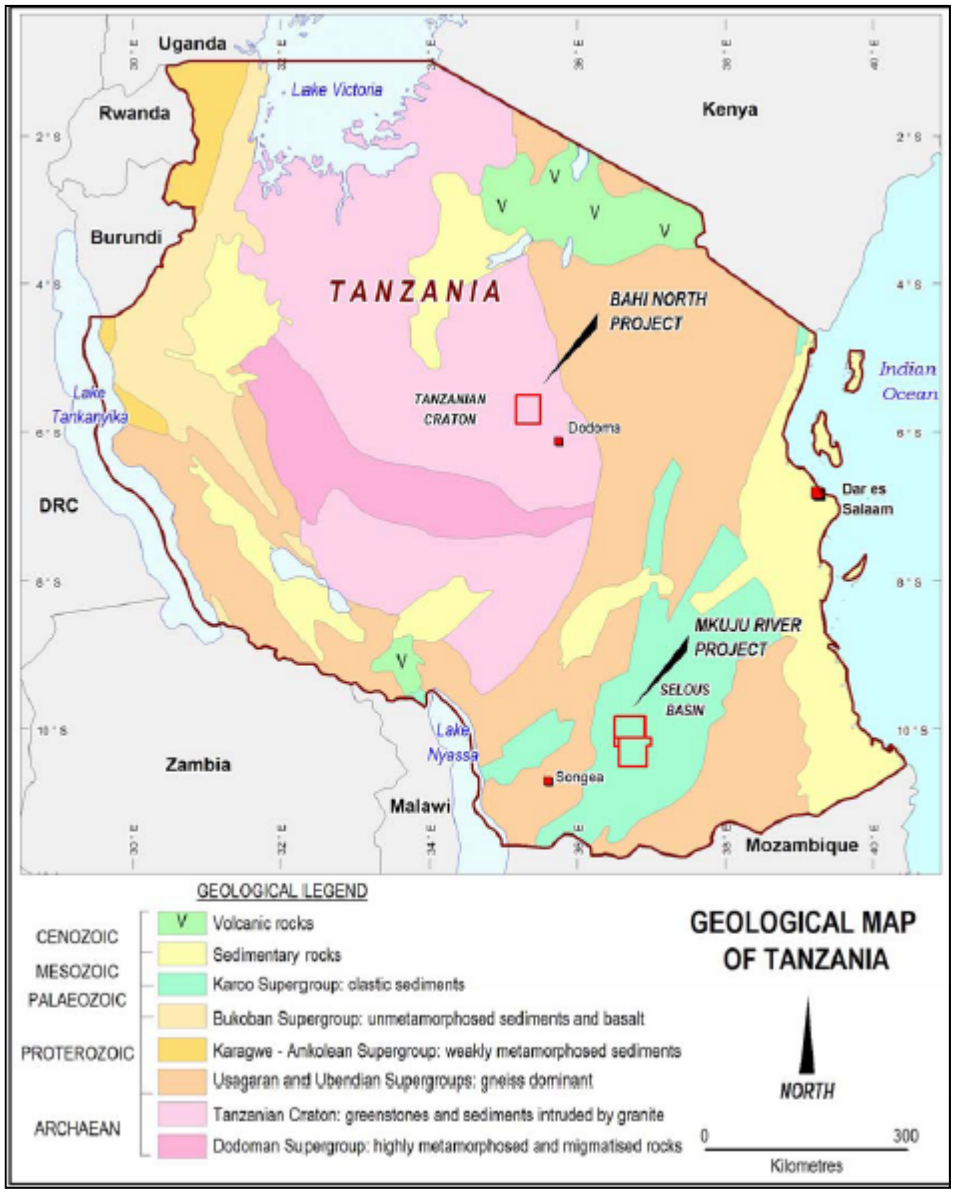
Plan

1. **Background**
   - Tanzania
   - Mkuju Project
   - Social Licensing
2. **UPSAT Overview**
3. **UPSAT Mission to Tanzania**
   - Team
   - Agenda
   - Objectives

▶ **Questions?**

Background Information

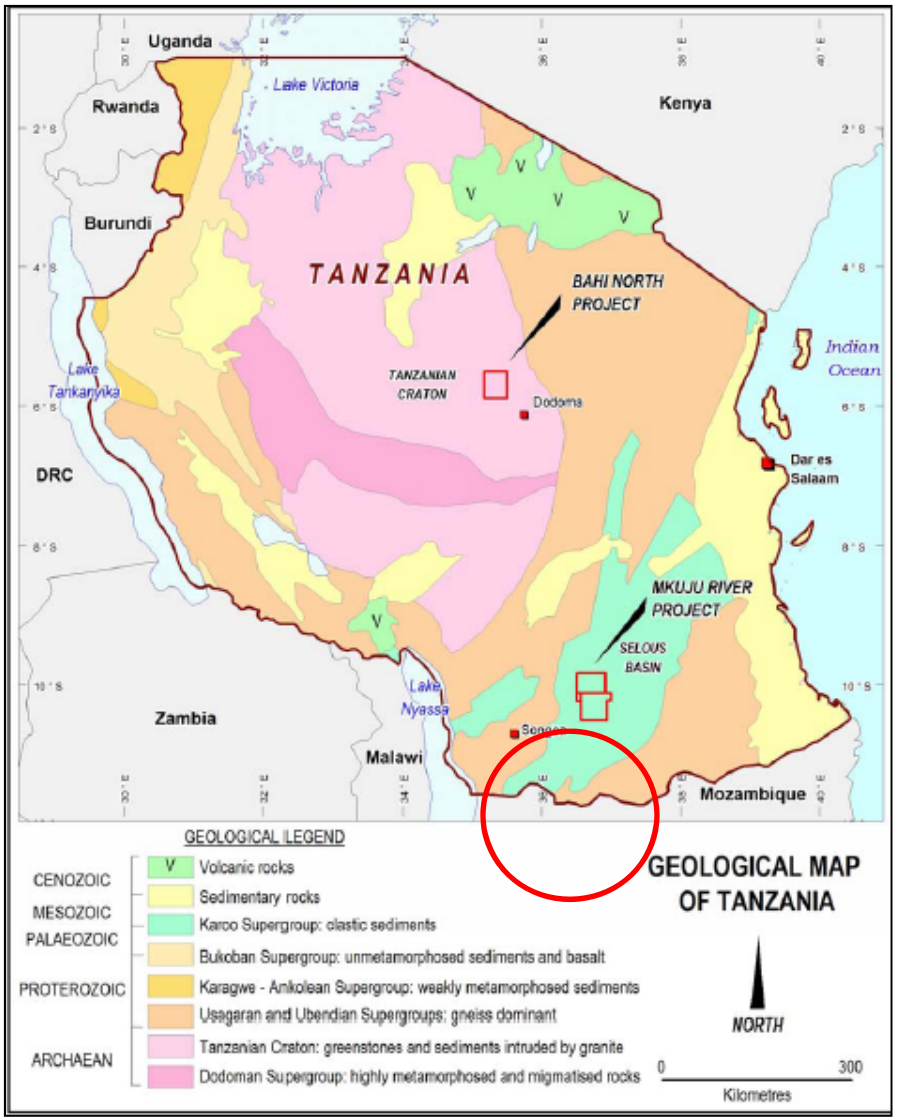
Tanzania Regional Geology



Uranium URT Exploration and Resources

Deposit	Resources (tU)	Type	Operator
Manyoni district-Zone A	1771	Surficial	Uranex NL
Manyoni district-Zone C 1	6122	Surficial	Uranex NL
Manyoni district-Zone C West	347	Surficial	Uranex NL
Manyoni district-Zone E	2079	Surficial	Uranex NL
Manyoni district-Zone F	462	Surficial	Uranex NL
Manyoni district-Zone G	655	Surficial	Uranex NL
Likuyu North	2308	Sandstone	Uranex NL
Mtonya	770	Sandstone	Uranium Resources
Nyota	55135	Sandstone	Uranium One
TOTAL	69649		

First Case - Uranium Mining Mkuju River Project



- In Southern Tanzania
- ~400km from Dar es Salaam
- In Selous Sedimentary Basin
- Adjacent to the Selous Game Reserve – UNESCO World Heritage Site

Mkuju Project History (1 of 3)

1977-1979

- **Regional government sponsored geophysical program identified radiometric anomalies**

1978-1982

- **Initial Exploration to follow up anomalism by Uranerz GMBH. Mapping, Trenching, no drilling undertaken, walk away with low U price**

1982 – 2006

- **No systematic work recorded**

2007

- **Feb Mantra commence work on site**
- **June First drill hole into site completed**

2008

- **Approx. 40,000m of drilling completed.**

Mkuju Project History (2 of 3)

2009

- **Maiden resource of 35.9Mlb released in January**
- **PFS Commenced**
- **Approx. 105,000m drilling completed in project**

2010

- **Release of updated resource of 84.3 Mlbs**
- **Commence DFS**
- **Approx. 250,000m of drilling completed in project**
- **Resource updated to 101.4Mlbs**
- **ARMZ/U1 offer**

2011

- **DFS Completed**
- **ARMZ/U1 offer completed**
- **Release of updated resource , combine 119 Mlbs (M&I&Inf**

Mkuju Project History (3 of 3)

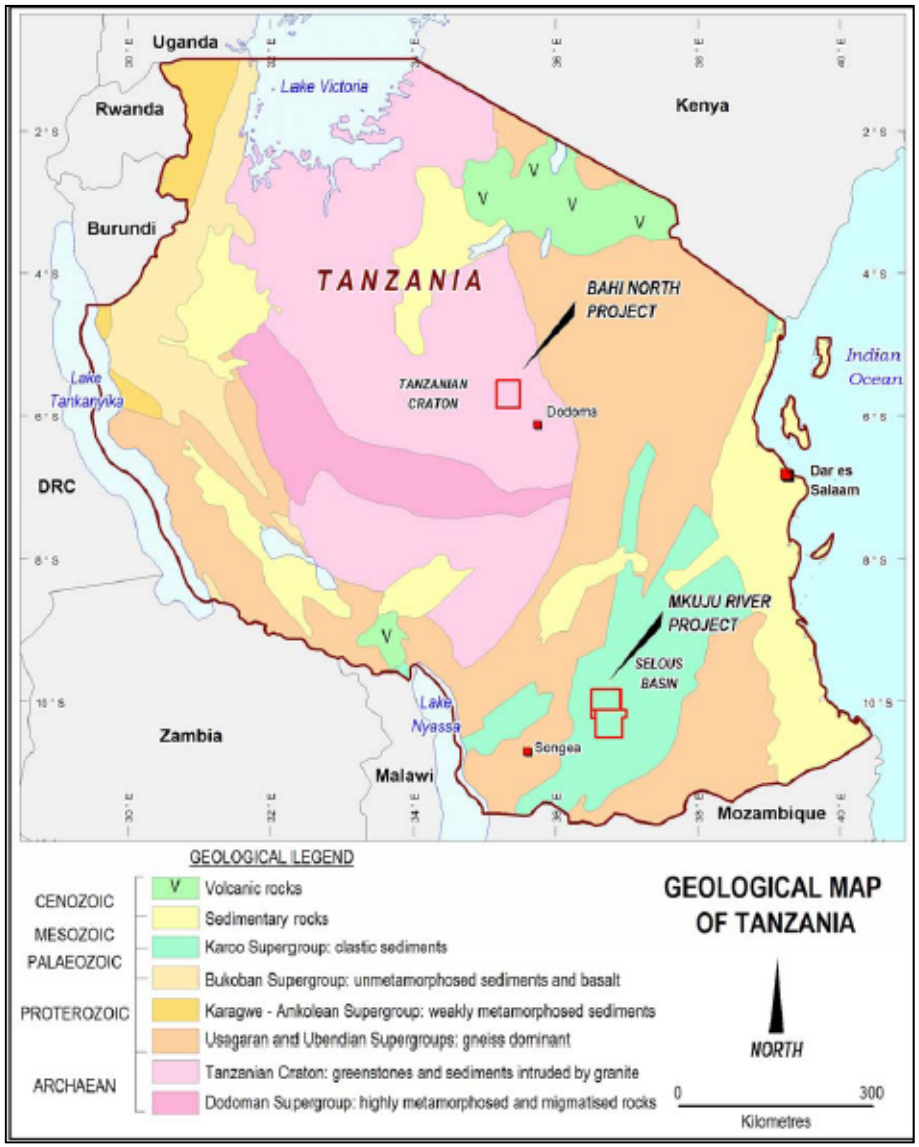
2012

- **Resources updated to 116 Mlbs**
- **Increased DFS Process Plant size - 6Mlbs / yr production**
- **Value Engineering exercise commenced.**
- **UNESCO approval**
- **ESIA approval**

2013

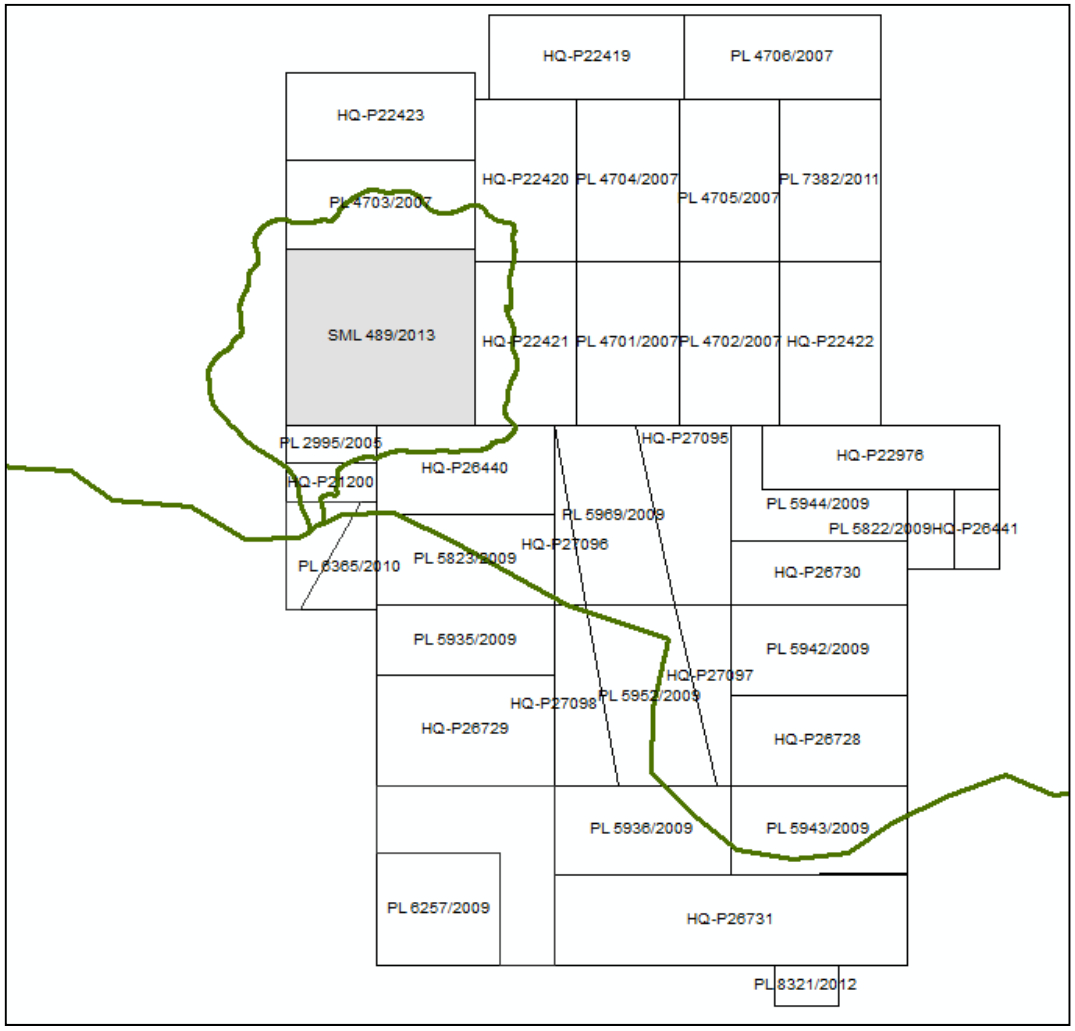
- **SML approval**
- **6Mlbs / yr DFS completed**

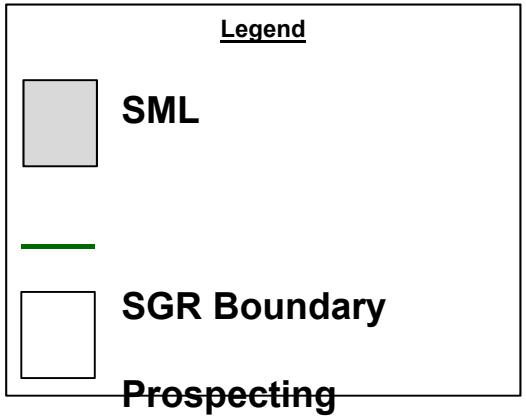
Mkuju Project Location



- In Southern Tanzania
- ~400km from Dar es Salaam
- In Selous Sedimentary Basin
- Within Boundary of Selous Game Reserve (UNESCO Heritage Site)

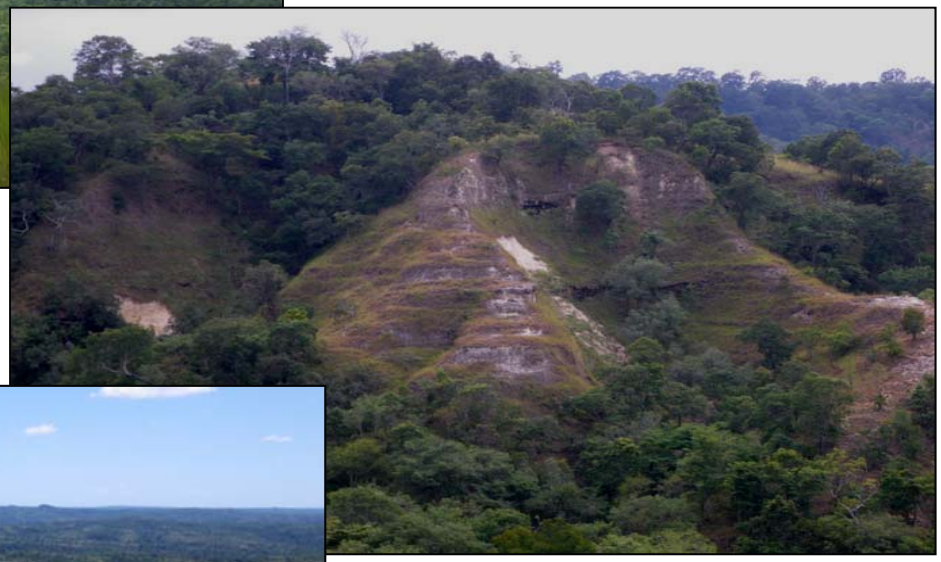
Mkuju River Project (MRP): Tenements and Special Mining Licence





- The Mkuju River Project consists of 36 licences
- In various stages of application and renewal
- Special Mining Licence for MRP
- Area excised from Selous Game Reserve (SGR)

Physiography



Community Consultations

UPSAT Overview

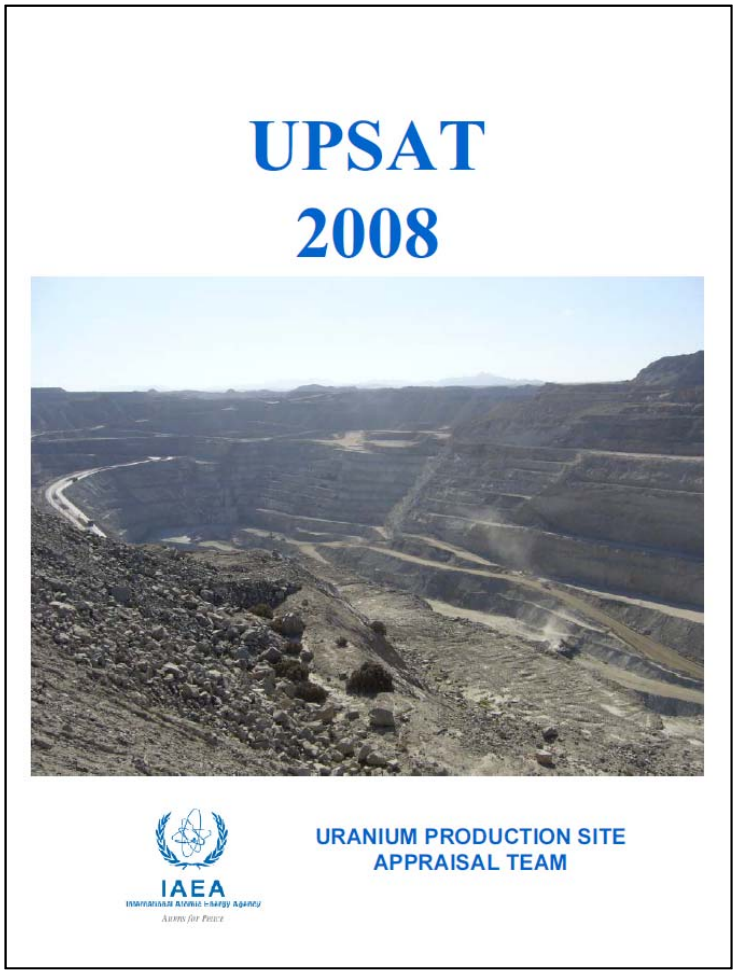
Programme Objective

The IAEA Uranium Production Site Appraisal Team (UPSAT) programme is designed to assist Member States to enhance the operational performance and the occupational, public and environmental health and safety of uranium mining and processing facilities across all phases of the uranium production cycle. These include exploration, resource assessment, mining, processing, waste management, site management and remediation, and final closure.

UPSAT

- ***UPSAT = Uranium Production Safety Assessment Team***
- ***"The principal objective of the UPSAT programme is the identification of areas that may require improvement and the formulation of recommendations for introduction of improved practices"***

- **See: http://www.iaea.org/OurWork/ST/NE/NEFW/Technical_Areas/NFC/uranium-production-cycle-UPSAT.html**



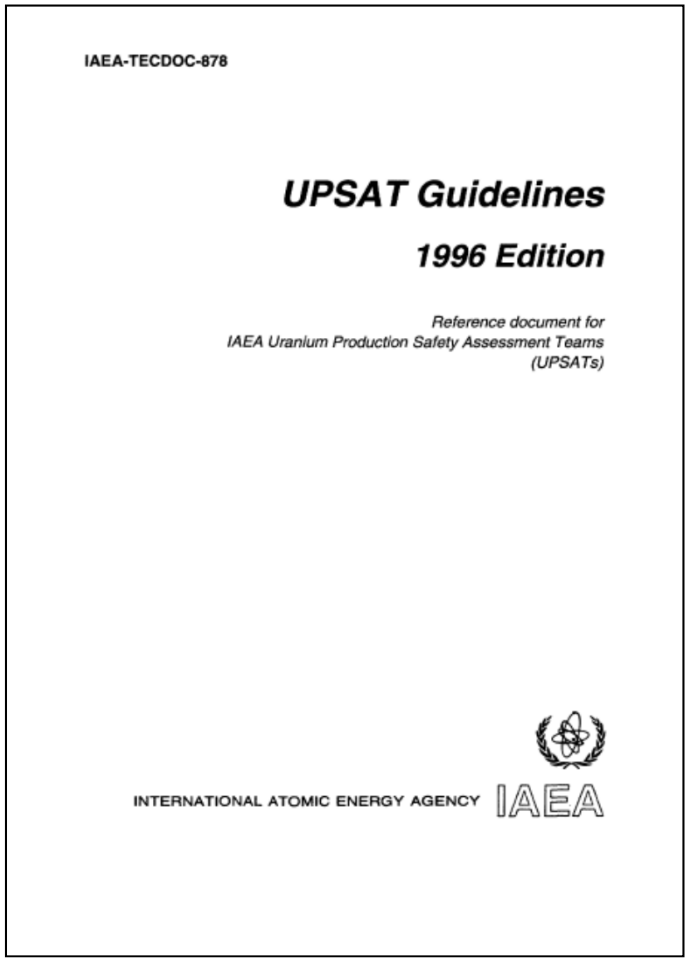
UPSAT – The History

Mid 1990's:

- Member States (MS) looking at uranium mining as a declining industry
- IAEA develops TECDOC-878 for UPSAT setting out the review process
- No requests received so programme put on hold

2007- 08:

- Growing numbers of requests from MS for assistance in all aspects of UPC activity
- UPSAT Brochure rewritten for GC 2008

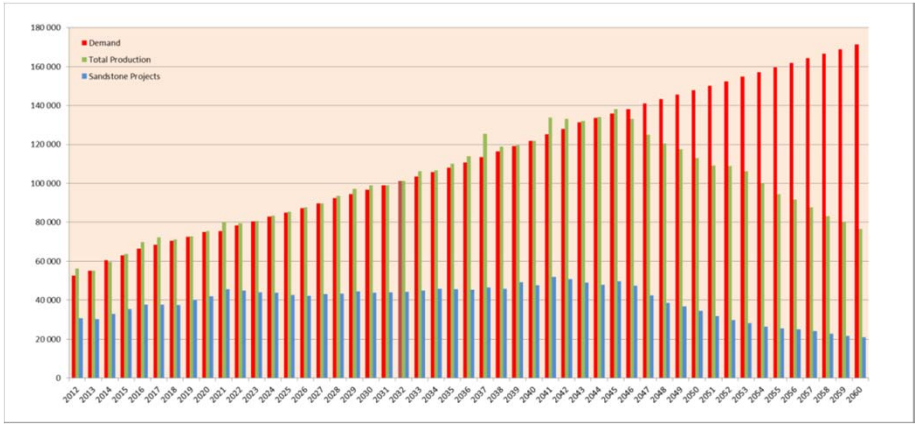


UPSAT – The Rationale

- **U mining is expanding to meet growing demand for raw material for nuclear fuel**

- **Many Member States (MS) are seeking to enter the Uranium Production Cycle (UPC), and some seek to re-start former production**

- **UPSAT designed to assist any interested MS to improve operational and safety performance in all and any areas of UPC activity**



UPSAT – The General Scope

- **An UPSAT mission is conducted outside any regulatory framework and is intended to supplement other facility and regulatory efforts which may have the same objective.**
- **The benefits of an UPSAT mission need not be limited to the subject facility.**
  - **Other facilities of the same organization, in the same country or elsewhere**
  - **Organizations which provided the review team experts**
  - **Regional sharing of experience**

▶ **Independent opinion on:**

- **Optimization of operation in proposed, planned, committed or on-going resource development programmes and their implementation**
- **Review of key performance indicators**
- **Upgrading present and future programmes on health, safety and environment; and**
- **Regulatory matters.**
- **Informing public of the activities, which may contribute to improving public acceptability.**

UPSAT – The areas of review

1. Management, organization and administration
2. Training and qualification
3. Operations
4. Maintenance
5. Safety, fire projection, emergency planning and preparedness
6. Radiation protection
7. Environmental monitoring programme
8. Construction management
9. Commissioning and decommissioning

▶Could be carried out any time during the lifetime of a uranium production site – pre-operational; operational and decommissioning phases

UPSAT – Key Objectives

1. Provide an objective assessment of the status of operational safety and practices at the site in the context of generally accepted international practices of operational safety and performance

2. Provide recommendations and suggestions for improvement in areas where performance falls short of generally accepted practice

3. Provide key staff of the site with an opportunity to discuss their practices with experts who have experiences of other practices in the same field

UPSAT – The Process

- **UPSAT missions are only carried out at the request of the relevant Member State**

- **IAEA agrees to assemble a team of relevant experts:**
  - **Geographical spread**
  - **Complementary skill set**
  - **International experience**
  - **Independent**

- **Review of:**
  - **Written material**
  - **Interviews**
  - **Direct observations**
  - **Discussion of evaluations**

UPSAT - The Schedule

	Activity	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
1	Request received from Member State						
2	IAEA reviews and considers the request						
3	Additional information needs identified by IAEA and information supplied by Member State						
4	Expert selection and assembly of team						
5	Information sent to team members for assessment and mission preparation						
6	UPSAT field activity						
7	Preparation of final report by team						
8	Processing of report by IAEA and dispatch to Member State						

UPSAT - Mission planning

- **Pre-mission funded by IAEA to establish ToR**
- **ToR and financial terms agreed**
  - **MS to pay all local costs and travel**
  - **IAEA TC may assist with international travel costs**
  - **UPSAT may be a TC project if it is accepted into the country programme**
- **IAEA appoints coordinator**
- **Team is selected**
- **Dates agreed**

Reporting results

- Initially, all experts submit a summary of findings to the team leader and facility management before the final departure of the team.
- Team members prepare a draft mission report according to the prescribed schedule and transmitted to requesting Member State
- Report is the property of the requesting Member State and of the reviewed organization, and will be kept confidential by the IAEA and the UPSAT team.
- The report or part of the report can be made publicly available only with the permission of the requesting Member State and organization.

Reporting results

1. **Recommendation - advice on how improvements in operational safety or environmental performance can be made in that activity or programme**
2. **Suggestion - either an additional proposal in conjunction with a recommendation or may stand on its own following a discussion of the pertinent background.**
3. **Good practice - an indication of an outstanding performance, programme, activity or equipment markedly superior to that observed elsewhere**
4. **Good performance - a superior objective that has been achieved or a good technique or programme that contributes directly or indirectly to good operational safety or environmental performance**

UPSAT Mission to Tanzania

UPSAT United Republic of Tanzania

- Formal request for UPSAT review was sent to IAEA on 23 October, 2012 by the Director General, TAEC
- Mission was approved by TC Africa under regional project RAF/3/007 – Early 2013
- Terms of Reference finalized
- Team selected

- Scope:

1. Regulatory system
2. Sustainable uranium production life cycle
3. Safety and Environment
4. Social licensing
5. Capacity building

UPSAT Tanzania - Team

- **Members:**

1. **Keith Baldry, Australia [Regulations]**
2. **Henry Schnell, Canada [Uranium production cycle]**
3. **Harikrishnan Tulsidas, IAEA Coordinator [Uranium production cycle]**
4. **Sylvain Saint-Pierre, France [Safety]**
5. **Zhiwen Fan, IAEA [Safety, Waste management]**
6. **Julian Hilton, UK [Social licensing, Capacity Building]**

The Agenda

- 27 May: Monday – Opening discussions
- 28 May: Tuesday – Analysis of issues
- 29 May: Wednesday – Sub-group discussions
- 30 May: Thursday – Site visit, Mkuju River project
- 31 May: Friday – Site visit, Mkuju River project
- June 1: Saturday – Sub-group discussions
- June 2: Sunday
- June 3: Monday – Finalization of recommendations
- June 4: Tuesday – Exit meeting – Reporting of findings
- June 5: Wednesday – Team debriefing and close of mission

UPSAT Results

- To be presented by Dennis Mwalongo

Questions?