

Uranium Resources Development

Implementing the Best Practice to Minimize Future Legacies

by

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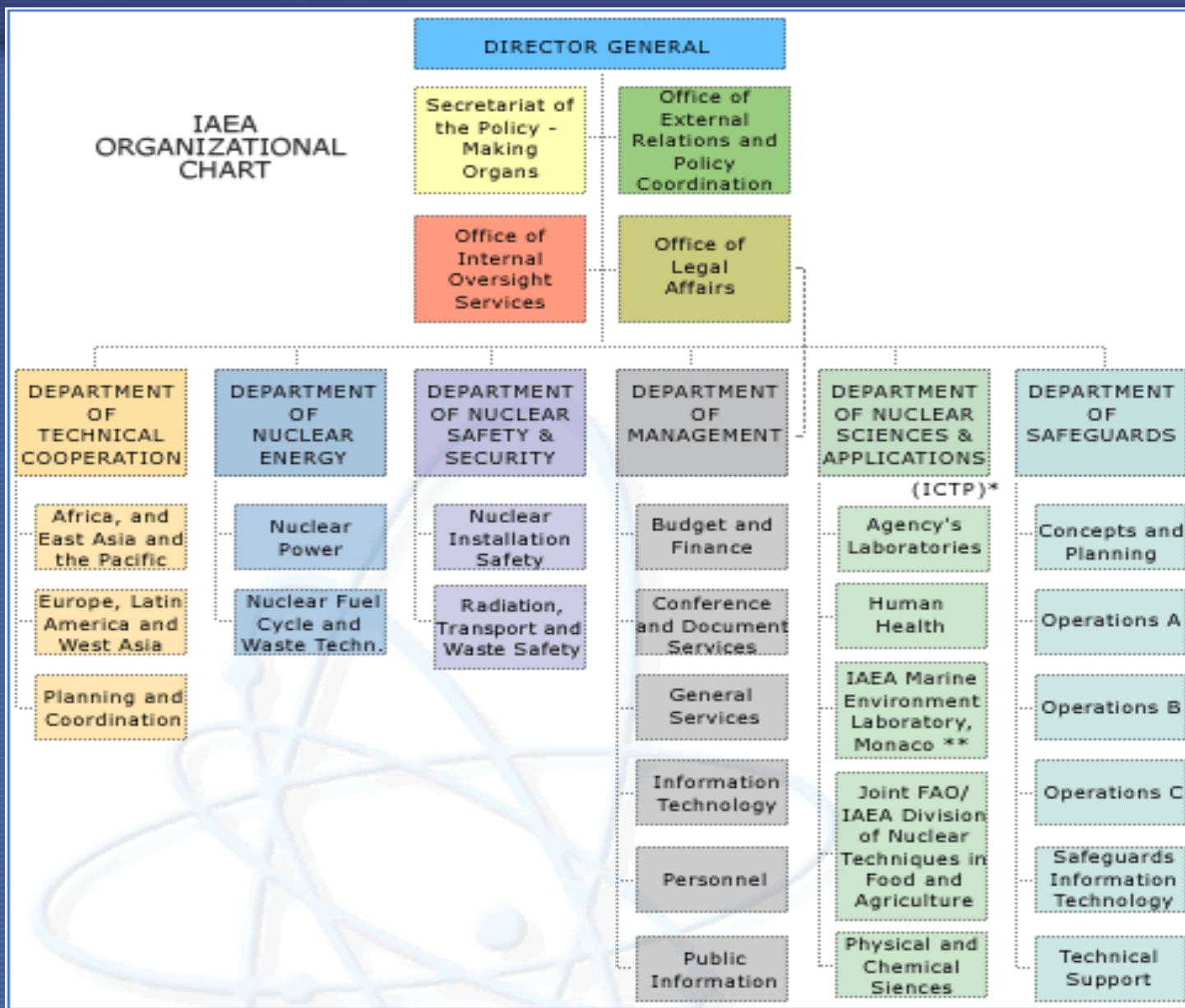
IAEA

International Atomic Energy Agency

The IAEA Mission

- **What is the Agency's mission?**
- The IAEA is an independent intergovernmental organisation in the United Nations family, that serves as the global focal point for nuclear co-operation. It:
 - assists its Member States in planning for and using nuclear science and technology and facilitates the transfer of technology and knowledgeto ... Member States;
 - develops nuclear safety standards and promotes the achievement and maintenance of high levels of safety in applications ... and ... the protection of human health and the environment against ionizing radiation;
 - verifies through its inspection system that States comply with their commitments only for peaceful purposes.

The IAEA Organisational Chart



The IAEA Programme on Uranium

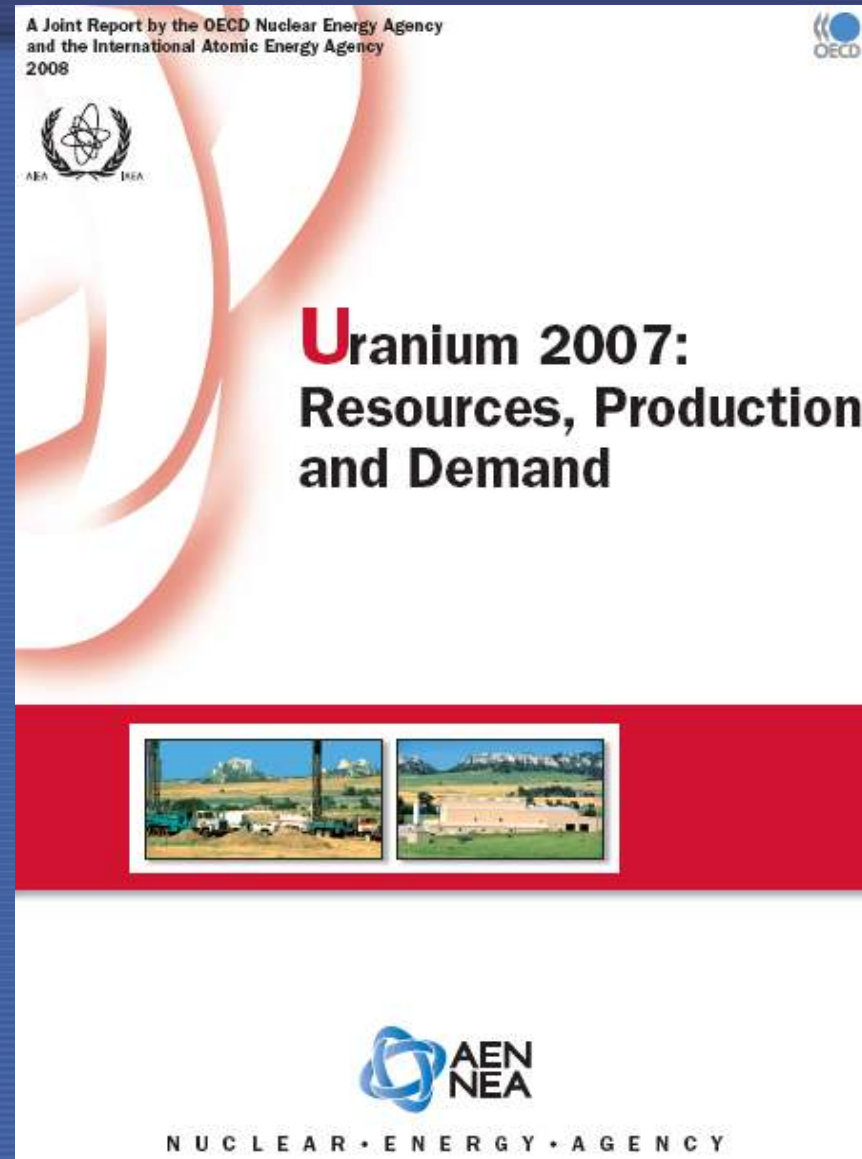
- IAEA Programme B (1.2): Nuclear Fuel Cycle and Materials Technology
 - Subprogramme **B1 (1.2.1): Uranium Resources and Production Cycle, Databases for Nuclear Fuel Cycle**
 - Project B1.01 (1.2.1.1): **Updating Uranium Resources, Supply & Demand and Nuclear Fuel Cycle Databases**
 - Project B1.02 (1.2.1.2): **Supporting Good Practices in Uranium Production Cycle**

Uranium Resources & Databases

- **Red Book** – biennial report on the world status in **Uranium** resources, S&D and country developments since 1965
- Classification of **Uranium** resources
- Classification of **Uranium** deposits
- Long-term **Uranium** supply analyses
- **UDEPO** – database of **Uranium** deposits
- NFCIS - directory of civilian nuclear fuel cycle facilities
- VISTA - Nuclear Fuel Cycle Simulation System

Uranium Resources & Databases

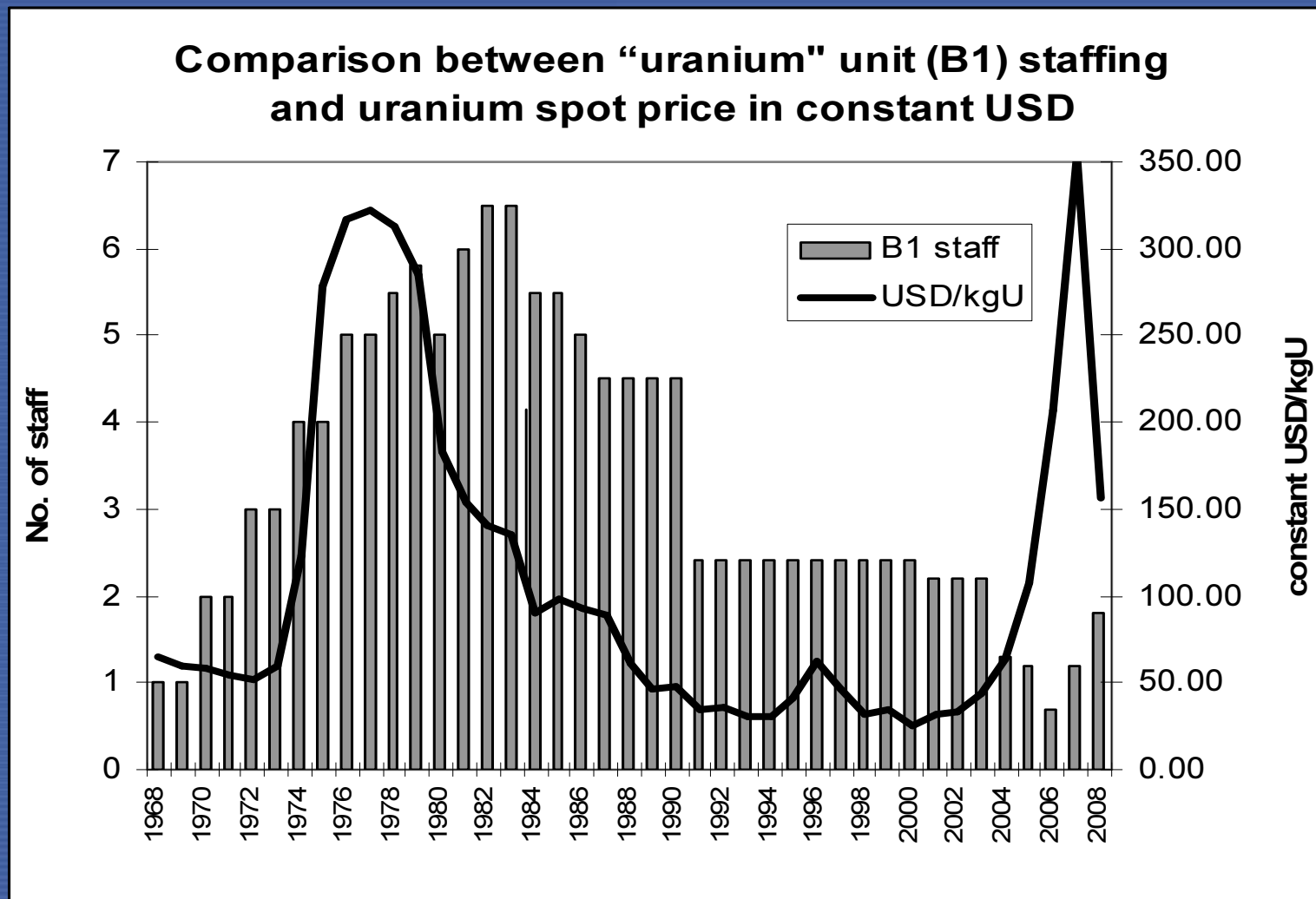
- The issue of **RED BOOK**
- Uranium 2007: Resources, Production and Demand
- 5.5 mil.tU of reported identified resources under 130 USD/kgU



Good Practices in UPC

- Uranium exploration
- Uranium mining technologies
- Uranium milling technologies
- Uranium mining and milling wastes (shared with Waste Technology section)
- Remediation after Uranium mining and milling and their closure
 - all of them including **ENVIRONMENTAL TASKS**

What stimulates the activities?



U production historical consequences

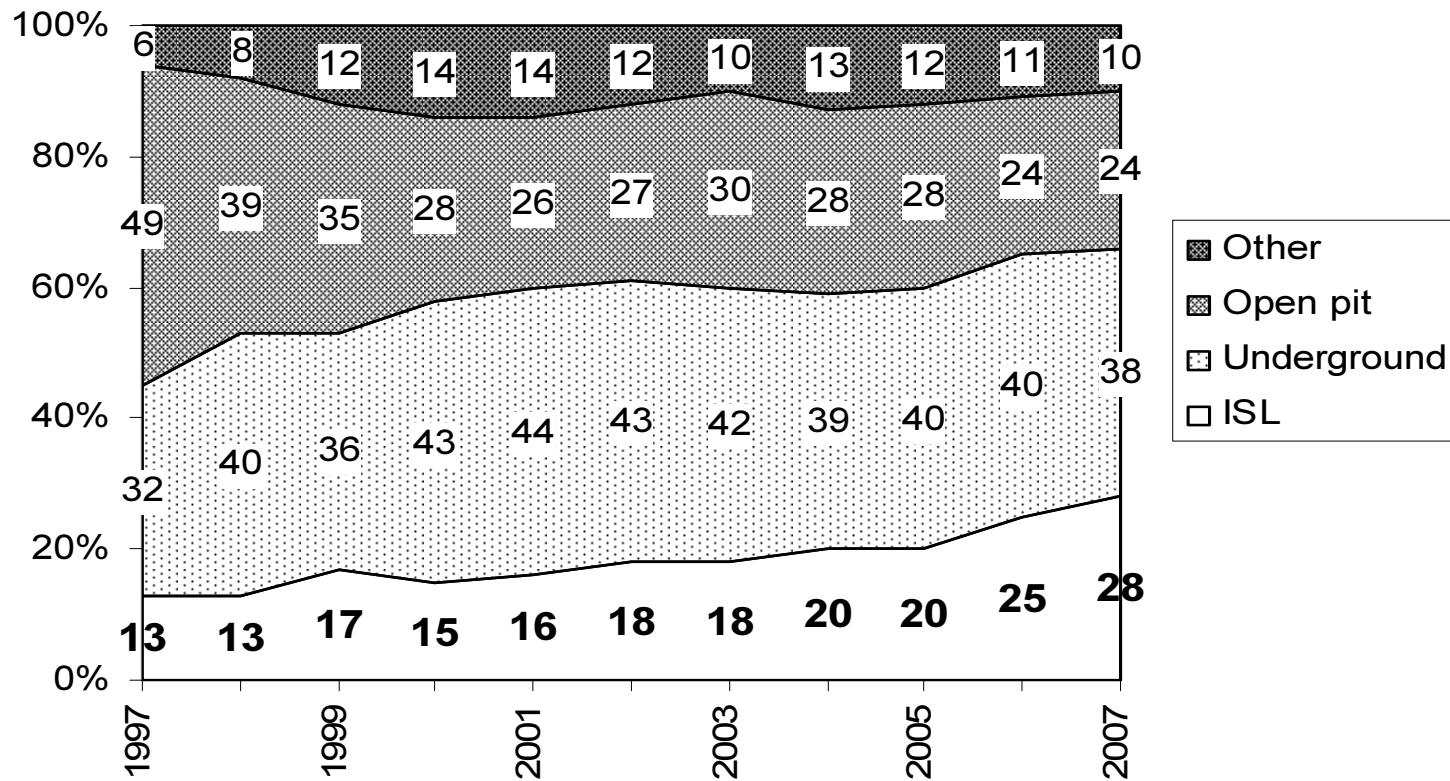
WERE WE SUCCESSFUL????

- Uranium was produced
- Some of the remediation actions were successful
- Some of them were not successful and
- Some of them were not done at all!!!!

=> WHAT SHOULD / CAN WE DO????

An example of new developments

Development of Uranium Production Distribution by Material Source



Uranium production recent developments

- Kazakhstan – 15 000 tU by 2010
- Canada – stable, but big development expected
- Australia – changing its policy?
- Namibia – expansion to double its production
- Niger – expansion to double its production
- Russia – expansion to support its NP
- USA – some properties under development
- and many others (UZB, UKR, CPR, SAR, BRA....)

WILL THEY WAIT WITH STARTING THEIR PRODUCTION AND WHY?

Uranium production future

WHY WILL THEY WAIT WITH STARTING THEIR PRODUCTION?

- Market conditions
- Political limitations
- Limitations of deposits
- Regulatory limitations
- Technical limitations
- etc. etc.

Solutions for a successful future

- Lessons learned to be respected
- Information exchange to be more intensive
- Proper planning using best practices
- Respect future generations
- Developing appropriate infrastructures
 - Operational
 - Regulatory
 - **Educational**

and much more.....

Solutions for a successful ISL future

- New activities within an IAEA B1 subprogramme:
 - Optimization of ISL to ensure environmentally sound, economic and reliable operations
 - Creating a network on training and education in Uranium Production Cycle

The Uranium Production Cycle

Uranium exploration

=> Uranium resources

=> Prefeasibility study

=> Detailed uranium exploration

=> Uranium reserves

=> Feasibility study

Uranium mining & processing operation development

=> Uranium mining & processing

=> Remediation after Uranium mining and processing

=> Closure of mining & processing operation

=> a new use of the area

The involved parties and their relationship

Operators

Regulators

Public

The organisational environment

Legal framework

Regulatory framework

Social framework

Economic framework

Historical consequences

What should/can be easily done

????

Think about the end
from the very beginning of all activities
and try to take into account
everything available

BEST PRACTICE

The IAEA International Symposium

- A big event on 22-26 June 2009
- **URANIUM RAW MATERIAL FOR THE NUCLEAR FUEL CYCLE (URAM-2009)** including:
 - Uranium markets, supply and demand
 - Social licensing
 - Uranium geology, exploration and deposits
 - Uranium mining and processing
 - Regulatory and environmental issues
 - Educating new generations

- **THANK YOU FOR YOUR ATTENTION**

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