Groupe d'Expertise Pluraliste

A pluralist expertise approach to the management of closed uranium mining sites in France

Le Groupe d'expertise pluraliste (GEP) sur les mines d'uranium du Limousin

IAEA Conference - URAM 2009,
Vienna, Austria, 22-26 June 2009

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STATUS OF GEP AND ITS WORK

- **GEP at a glance**
  - Commitment, organisation and means
- **Scope**
  - Global approach and main issues
- **Work on transfers to the environment**
  - Overview and focus on some specific studies
- **Work on health and environmental impacts**
  - Overview and focus on some specific studies
- **Work on regulatory and long term issues**
  - Overview and focus on some specific studies
- **“Transverse” issues and generalization**

SPECIFICITY OF GEP

- **A "pluralist expertise group"**
  A group commissioned by the authorities
  to develop **technical dialogue** bringing various experts together
- **Relevance**
  - contribute to solve **complex issues** with high **societal stake**
  - need to embed **contradictory analysis** / build **shared understanding**
- **Composition**
  - the **operator(s)** in responsibility to demonstrate safe risk management
  - **public expert bodies** committed to advise autorities
  - concerned **NGOs** and **independent experts** producing their own analysis and expertise
- **A specific kind of stakeholders involvement**
  - distinct from **local / national commissions** gathering all players, not replacing but completing them
  - in need of dialogue with these to answer their concerns

NATIONAL / LOCAL CONTEXT

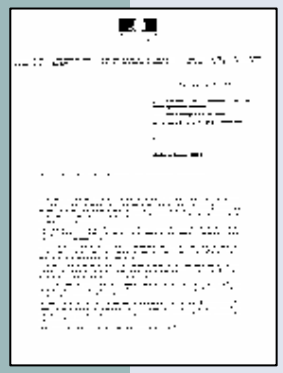
Questions raised

- **Environmental impact / long term**
  - Mines closed, rehabilitation done but concerns with specific issues: contaminated sediments, reuse of waste rocks, long term management...
  - Local controversies, media and juridical cases
- **Specific government response**
  - Commissioning of the **Pluralist Expertise Group (GEP)** by the French Ministers of Industry, Health, Environment (2005) plus the French Nuclear Safety Authority (ASN, 2007)

Mill tailings disposal site after remediation (MCO 68 - 105, Bellezane)

GEP'S COMMITMENT

1ère lettre mission
fin 2005



2ème lettre mission
fin 2007

A global commitment (mid 2006-end 2009)

- **Contribute to the technical analysis** of documents produced by AREVA (BDE) and their third expertise by IRSN
- **Advise on management options:**
  - Recommendations to reduce the impacts of mining sites in Limousin
  - Mid to long term management strategies, including a methodology for generalizing to all French uranium sites
- **Participate in the information of local players and the public**

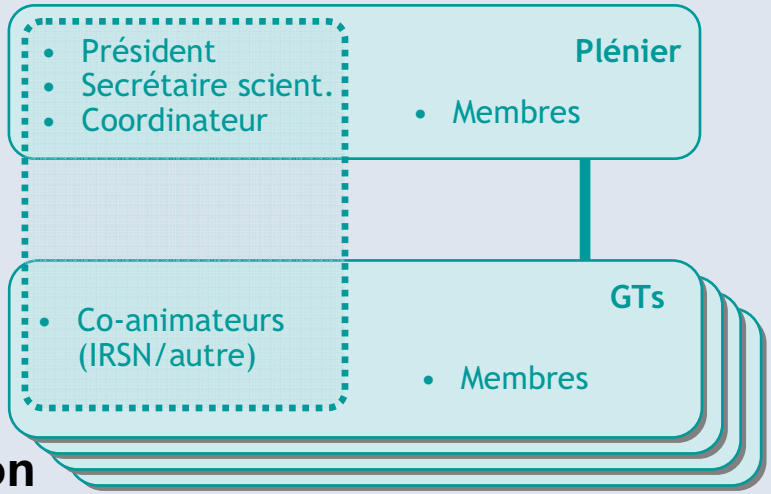
A part of a broader process

- **Existing remediation work and production of a doctrina**
- **Local authorities' work,** especially in Limousin
- **Link with the implementation of the 2006 law** on sustainable management of radwaste and nuclear materials

COMPOSITION OF GEP

Pluralistic composition *and* organisation

- **Diversity in two ways:**
  - Pluralism of competencies
  - Pluralism of points of view
- **Over 40 experts involved**
  (> 30 in plenary + working groups)
- **Working groups and principle of pluralist organisation**



Public Institutes and Administration	NGOs and independent	Industry	Foreign experts
- IRSN, InVS, INERIS, GEODERIS - Universities - Authorities	- Independent Experts - GSIEN, ACRO - Sources Rivières Limousin, Association Sauvegarde Gartempe	- Areva NC	- IAEA - UK, Switzerland, Belgium, Luxembourg, Israel
16 experts	**5 experts**	**5 experts**	**6 experts**

GEP'S MEANS

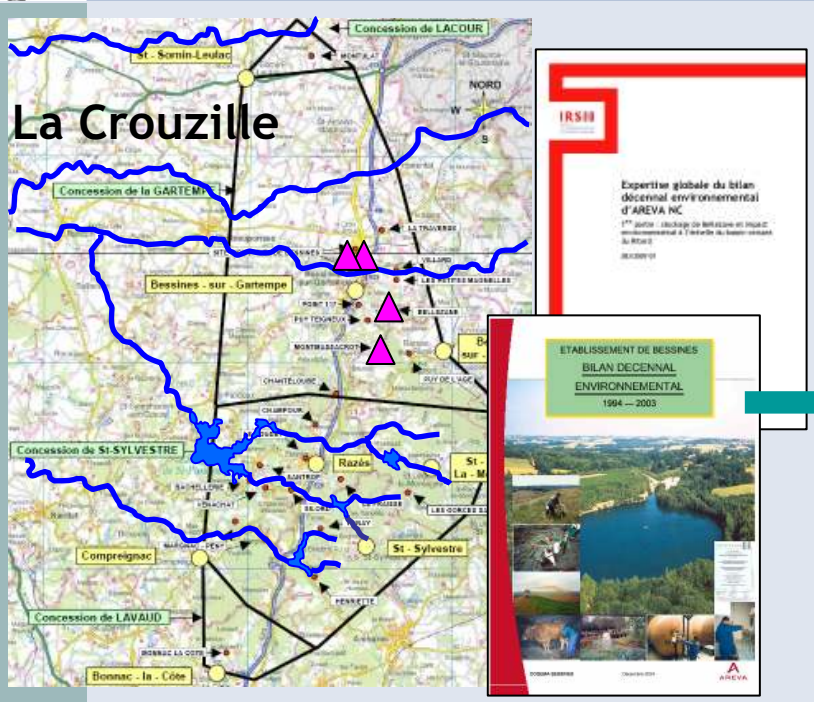
Effective pluralism relies on convenient means

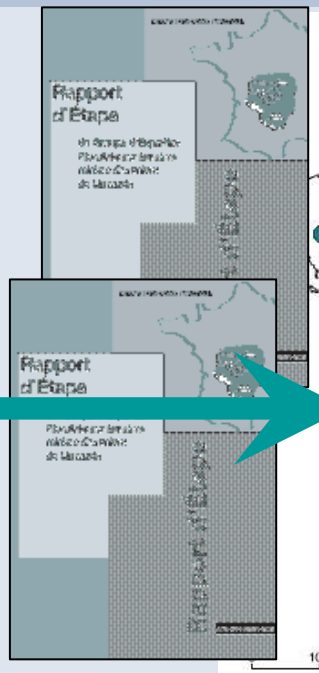
- **Availibility of technical expertise**
  - Contribution of IRSN (third expertise...), contribution of AREVA (BDE...)
  - Access to other studies and potential for complementary studies commissioned
- **Financing Protocol**
  - Support to NGOs / independent / foreign expertise
  - Secretary and administrative support
  - Participation in exchanges at local, national and international levels
- **Workload**
  - Between 25 et 40 meetings per year (from plenary to small, specific)
  - Between 5 and 10 presentations given (local, national, international)

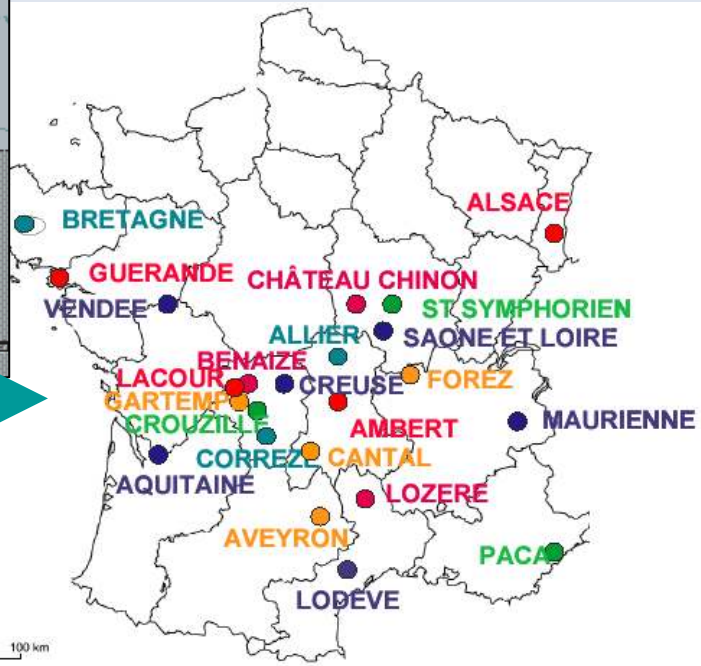
Année	Plénier	GT1	GT2	GT3	GT4	Local	National	Internatl
2006	4	3	3	**2**	0	0	0	0
2007	8	4	4	**6 (+ 2*)**	1**	2	1	2
2008	6	6	7 (+ 6*)	**7**	6***	3	1	5

* Réunion restreinte, ** Commune avec le GT1, *** Dont une commune avec le GT2

GEP'S GLOBAL APPROACH







- 24 mining sites (58 Mt waste rocks)
- 4 tailings disposal sites (20 Mt)

- 200 mining sites (>200 Mt waste rocks)
- 17 tailings disposal sites (52 Mt)

Detailed analysis of sites in one Mining Division (La Crouzille)

• understanding the systems, assessing the status, identifying the key points for evolution

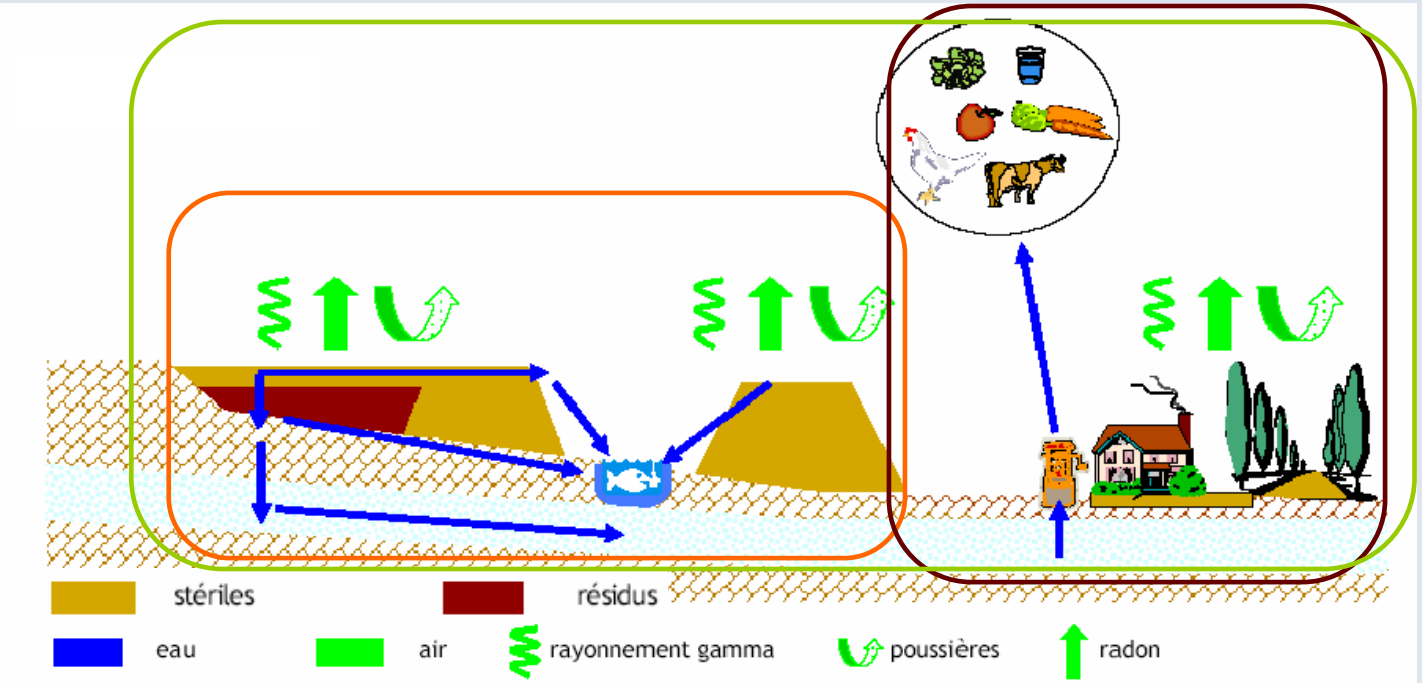
Step-by-step approach towards methodology and generalization

• predicting the evolution of the sites based on the current status

• elaborating a global assessment / management approach applicable to all sites

GEP'S ORGANISATION OF WORK

- Transferts of radioactive / chemical materials from the sites to the environment — **WG1**
- Exposition of flora, fauna and populations, health and environmental impacts — **WG2**
- Regulatory framework, socio-economic context, and long-term concerns — **WG3**



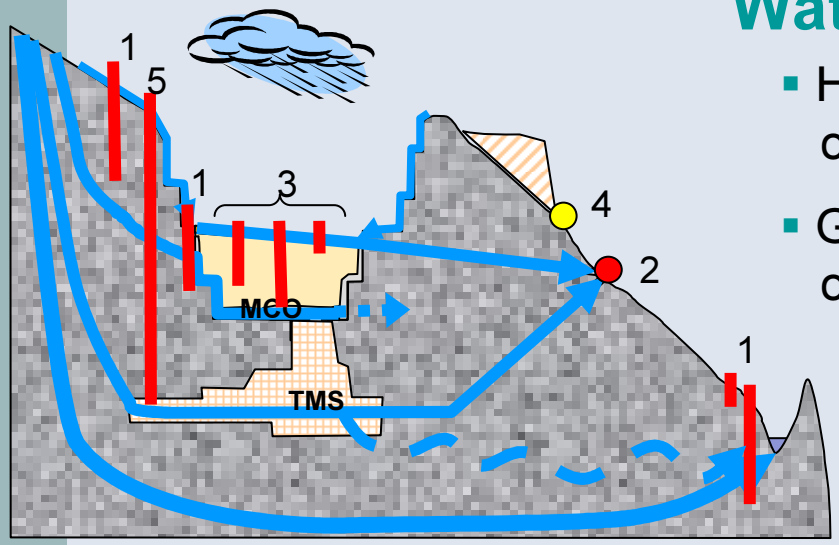
An overview of WG1's work

- **Themas**
  - Status of remediation on sites
  - Status and evolution of transfers to the environment
- **Identification of mechanisms in the physical sphere**
  - Sources of radioactive and chemical contamination
  - The transfer modes from the sites to the environment (water, air...)
- **Analysis of the systems on the sites**
  - mining works
  - waste rocks piles
  - mill tailings disposals
  - water collecting and treatment
  - deposits of contaminated sediments
  - re-used waste rocks

FOCUS: ISSUES FOR WG1

Air transfer (Bellezane)

- Efficiency of the cover / radon, gamma, dust...



Water transfer (Bellezane)

- Hydrogeological characterization of water flows through the site
- Geochemical characterization of influence of materials on waters

Water treatment (Augères)

- Improvement of treatment efficiency, exploration of “passive” options
- Concern for contaminated sediments

Understanding current transfers →

- **Demonstrate efficiency of systems**
- **Identify corrective actions where needed**
- **Develop a predicting capacity**

HEALTH AND ENVIRONMENTAL IMPACTS

An overview of WG2's work

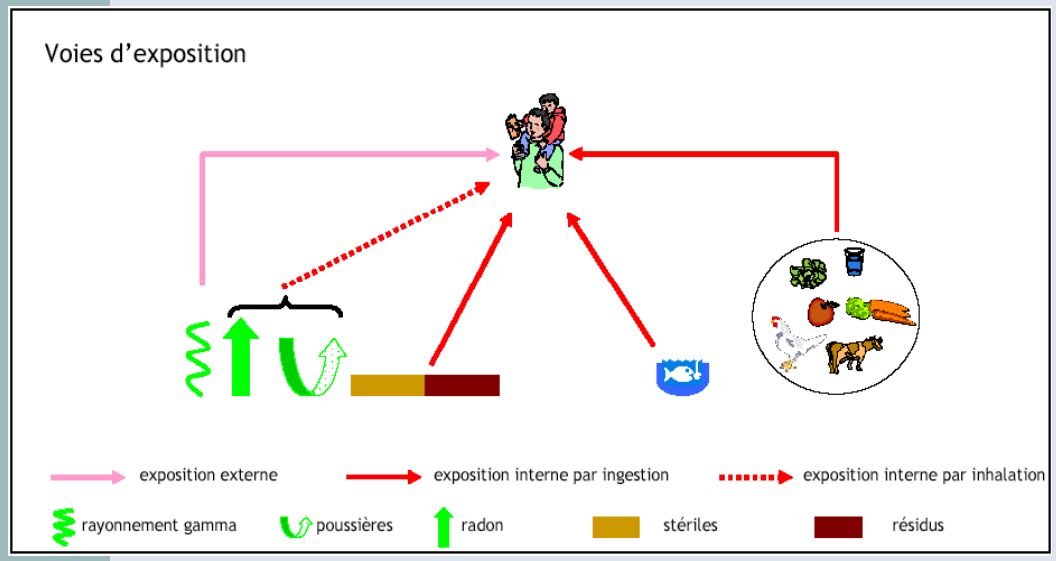
- Go beyond health and environmental impact assessement set forth in regulations
- Identify and discuss available tools for health monitoring

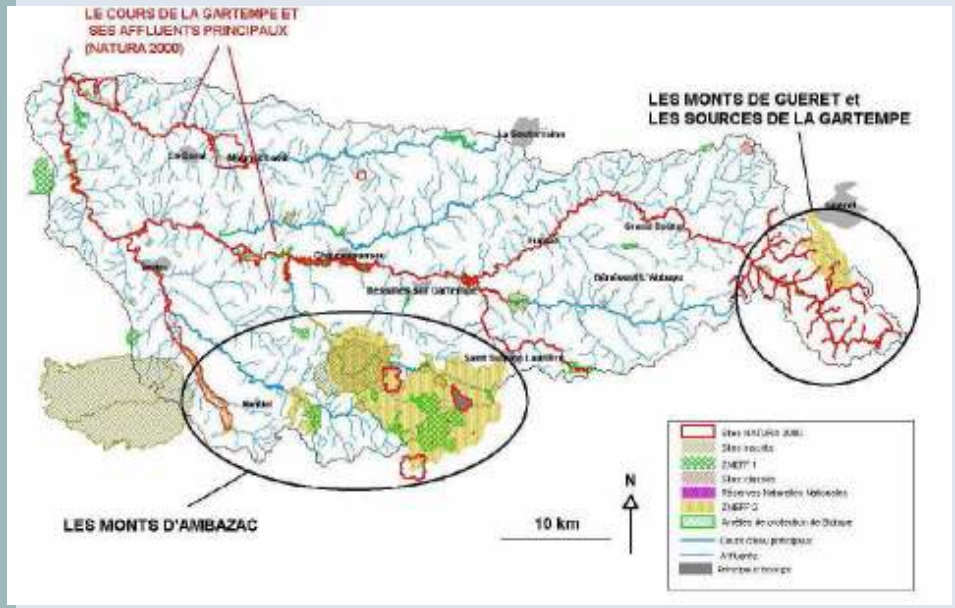
1	**Environmental Impact** *radiological and chemical*
2	**Health Impact** *radiological and chemical*
3	**Health monitoring**

- Specific assessment to address concern for **local ecosystems**
- Discussion of method to address concern for **dose assessment**
- Development of specific assessment of the **chemical risk**
- Health **monitoring**: reviewing public health surveillance

- Develop capacity to assess evolution of impacts according to various scenarios (short, medium, long term)

FOCUS: ISSUES FOR WG2





Dosimetric impact

- Proposal of a revised methodology for the assessment of **added effective dose** (shift from reference groups to scenarios)

Health monitoring

- Ongoing study of available health data (cancers) with geo-localisation of cases

Environmental impact

- Test of new methods to assess radiological and chemical impacts on **ecosystems** (e.g. ERICA)
- Recommandations on specific monitoring tools (e.g. Natura 2000)

REGULATORY FRAMEWORK AND LONG TERM

An overview of WG3's work

- **Link between technical analysis and societal concerns:**
  - Changing priorities in the area of environmental protection
  - Sustainability of rehabilitation works
  - Long term liability (transfer from the operator to the state)
  - Stakeholders involvement

- **Working themes:**

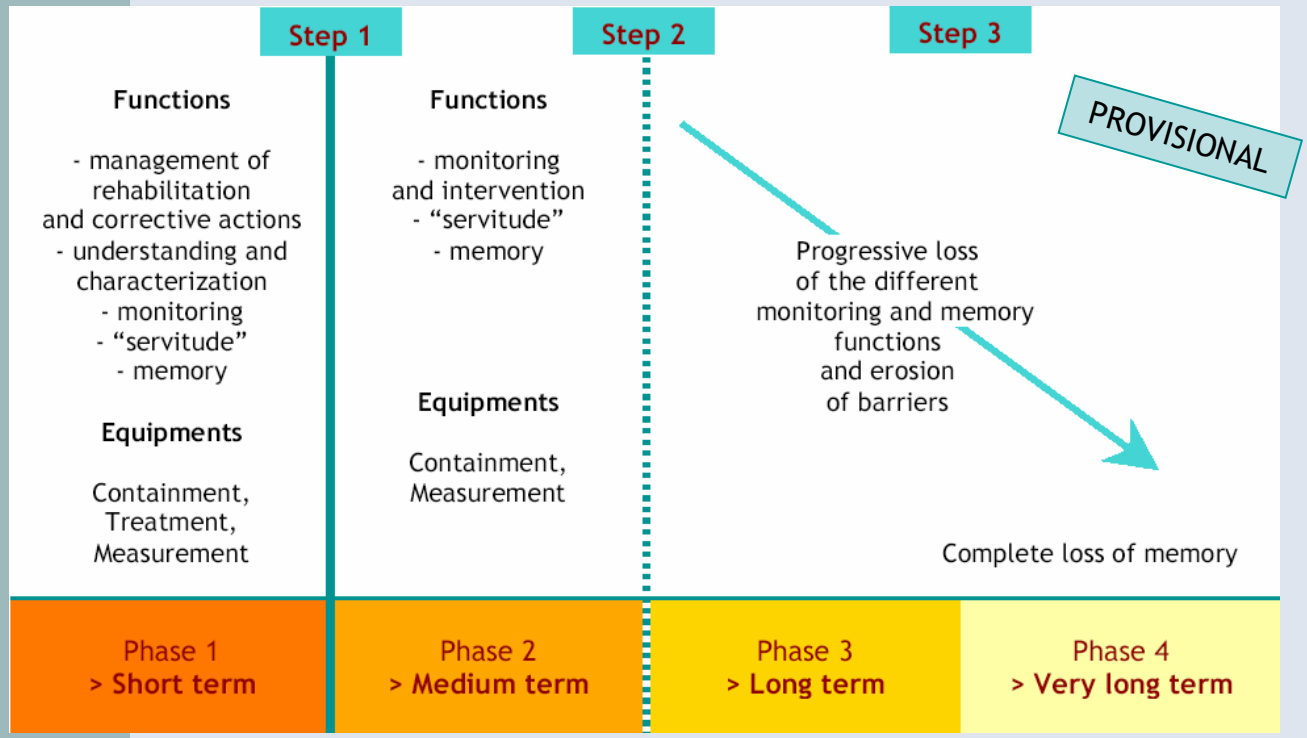
"Organisational" field	"Operational" field
4 Regulatory status of concerned materials and sites	4 Scenarios to take into account (hazards, timeframe)
4 Responsibility over sites and memory	4 Scope and nature of «active/passive» technical options (monitoring, ...)
4 Financing the long term	4 Long term and health impact
4 Control, expertise, stakeholders involvement	4 Long term and environmental impact

FOCUS: ISSUES FOR WG3

Comparison with existing long term doctrina

- Compared to concepts for long-lived radioactive disposal sites, inherited situations derogatory to the basic containment principle
- Need to consider long-term impacts in a very specific way
- Proposals to broaden the scope of scenarios considered

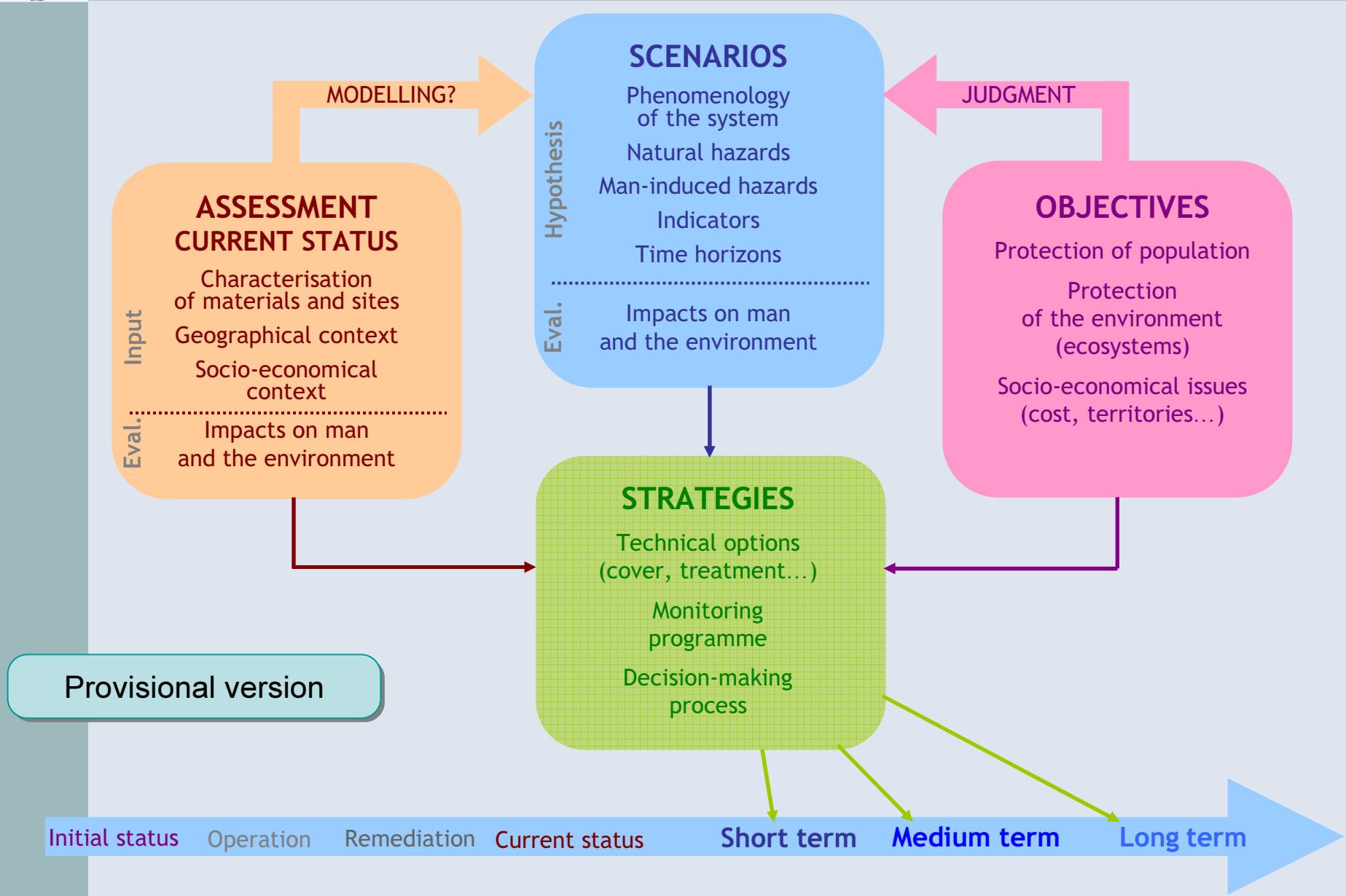
WG3 view - evolution of tailings disposal sites through time



Long-term issues

- Perennial vs. "active" systems (e.g. water collecting and treatment)
- Re-use of sites and materials (e.g. housing on residues, use of waste rock piles)
- Memory and archive
- Need for **short-term** actions to address **long-term** impacts

GLOBAL APPROACH



ONGOING WORK

Developing “transverse” work (between WGs)

- **“Surveillance”**
  - What is at stake: evolution of the sites, of their potential impacts...
  - Phasing from characterisation to routine monitoring
  - Better identify things to monitor, and define indicators and criteria
- **Water discharges (collecting / treatment / limits...)**
  - Capacity to develop predicting models for the evolution of waters on sites?
  - Feasibility of better adapting discharge limits to receiving areas
  - Status of alternatives to current chemical treatment
  - Pending issue of perennial treatment vs. evolution of waters / limits
- **Long term protection**
  - Evolution of inherited situations over medium and long term
  - Criteria for assessing the impacts, objectives of protection
  - Actions to be taken to reduce long term hazards

PREPARATION OF FINAL REPORT

Aim for final report

- **Deadline: end 2009**
- **Synthetic report**
  - Based on sites specific detailed studies carried on
  - Developing a global approach for assessing the status and management options on existing sites
- **An operational objective**
  - Recommendation directly applicable (already in interim reports)
- **A willingness to pursue at least for information**

Projet de plan de rapport final

Introduction

Rappel des objectifs / lettres de mission
Objet du rapport
Champ d'application du document

1. Contexte

1.1. Histoire des mines en Limousin
1.2. Objectifs de la gestion des sites

2. Situation actuelle : état des lieux et impacts

2.1. Etat des lieux (sources et flux)
2.2. Contexte socio-économique
2.3. Evaluation des impacts
2.4. Transposition de la méthode à d'autres sites

3. Situation à long terme : évolutions et impacts

3.1. Scénarios d'évolution des sites
3.2. Evaluation des impacts
3.3. Transposition de la méthode à d'autres sites

4. Gestion des sites miniers

4.1. Options techniques
4.2. Surveillance
4.3. Gouvernance

5. Synthèse des recommandations du GEP

INTERNATIONAL CONCERN

International Perspective

❑ International return of experience

- Large REX… but very few specific lessons regarding long term issues
- Less shaped international doctrina than expected
- Need to connect with evolution of radiation protection concerns

❑ International openness

- Participation of IAEA and foreign experts
- Regular exchanges with WISMUT (Germany)
  - Different in size and context
  - Convergent in general options, with some technical differences
  - Confronted to similar issues mostly linked to long term
  - Step-by-step discussion from the comparison of general approaches down to specific issues

❑ Interest in further input from international experience

ACHIEVEMENTS / PROSPECTS

Interim "Balance Sheet"

- **Operational**
  - work in progress, published in interim reports
  - first operational and local recommendations implemented
  - ongoing dialogue with local commissions in Limousin
  - website on-line: www.gep-nucleaire.org
- **Added value**
  - playground for broader technical and scientific dialogue
  - multiple approach, enhanced methodology
  - interlinking technical and societal analyses to address long term issues
- **Challenge / final delivery (end of 2009)**
  - from analysis of current situation to prospective options
  - from site-specific analysis to a global approach
  - from experts discussion to relevant recommendations

Thanks for your attention

More information:

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www.gep-nucleaire.org

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