



Strengthening Capacities in the Western
Balkans Countries to Address Environmental
Problems through Remediation of High
Priority Hot Spots

Regional Expert Meeting

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Brownfields and Mining in the Western Balkans

How did we get here? Where to next ?

Philip Peck

UNEP, ENVSEC & Lund University





How did we get here?

UNDP & UNEP & Mining

The countries of the Western Balkans

Where to next?

Better practice

More capacity

More resources

More Legitimacy





Results of ignoring good practice - General



- Include:
 - Ground and surface water contamination from seepage from waste piles and tailings
 - Air quality issues e.g. dust
 - Soil contamination
- In SEE a critical issue in the short to medium term is TMF stability
- Most serious issue long term issue is acidic drainage and metal leaching







Tailings dam with underflow culvert (Rreshen, Albania)



A DUST and HUMAN HEALTH problem becomes a mass tailings release (culvert failure under Sasa Mine Tailings Dam, Macedonia)



sec.org



photo:UNDP, Macedonia





photo:UNDP, Macedonia

Mine drainage to surface waters, pollution of irrigation waters, sediment contamination (Bor, Serbia)



www.envsec.org



23. 5. 2006

Photo: Dejan Milenic, Serbia




Instability of engineered structures, large scale chronic release of pollution, risk of mass tailings escape (Fushe Arrez, Albania)




Cyanide contaminated water release (Baia Mare, Romania)

2 Feb. 2000



Baia Mare: On 30 January 2000, a breach in the tailings dam of the Aurul S.A. Baia Mare Company, released some 100 000 m³ of cyanide-rich tailings waste into the river system near Baia Mare in north west Romania. This spill released an estimated 50-100 tonnes of cyanide, as well as heavy metals, particularly copper, into the Somes, Tisza and finally into the Danube Rivers before reaching the Black Sea.



Inappropriate tailings disposal threatens society and the environment!



Contaminated mine waters (Bucim, Macedonia)



History is important



Significant body of UNEP work before the Western Balkans.

Information exchange covering:

- *best practice mining operation,*
- *tailings management,*
- *accident prevention and preparedness,*
- *regulatory and management practice,*
- *role of the financing sector in enhancing environmental performance.*

Extensive training material

We should not ‘Reinvent the Wheel’



UNEP/UNDP regional activities – Some examples



- Baia Mare investigation in 2000 → → cyanide code
- SEE Mining Desk Study 2004
- Hotspots delineation – a process in itself
- ‘Mining for Closure’
- (Input) UNECE tailings convention
- Training workshop in Serbia - mine waters
- Training workshops Eastward (outside this programme - shared problems!)
- Training workshops in Montenegro (site investigations)
- Slovakia (AMD/mine inventory Study Tour)
- Etc.

PROACTIVE WORK

REACTIVE WORK



UNEP mining, minerals, & environment initiatives – their general aims



- **Integrate** environmental criteria into mining and mineral development
- **Ensure** that the sector contributes to national development in the long term (sustainable development).
- **Enhance** governmental and corporate policies and practices concerning mining operations,
- **Encourage** leadership among key stakeholders concerning scientific, regulatory and technical development of the industry.
- **Facilitate** achievement of more sustainable production and consumption patterns at global and national levels.



UNEP & UNDP – elements of ongoing/future works and programmes



- Practical example(s) of ENGINEERED risk reduction works on Tailings Impoundment(s)
- Risk reduction intervention(s) on acid mine waters
- Capacity, institution building & dissemination
 - ‘ownership’ and monitoring of hazardous sites
 - mobilisation and implementation of risk reduction project & engineering works
 - Accident preparedness – Industrial Accident Prevention
- Regional dissemination and contribution of experiences
 - to national cleaner production program(s)
 - to mining networks
- Action at further identified mining hotspots throughout the region
- Training and capacity development towards EU requirements
 - Mine Waste Directive
 - Water Framework Directive
- Implementation of Conventions (IPPC, EIA, monitoring and permitting etc.)



Thank you for your attention!

Philip Peck

Tegnérplatsen 4 LUND S-221 00 Sweden
Telephone: +46 (0) 709 220739 Fax: +46 (0) 46 222 0240
Email: philip.peck@iiee.lu.se

www.envsec.org



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SOME MINING RELATED UNEP PUBLICATIONS 2000 ONWARDS



Mining for Closure

Cyanide Code

Governance and Voluntary Initiatives

Mining Environment & Development

Mining Industry Partnership

Best practice Environmental Management in Mining –
Training Kit

APELL for mining (accident preparedness)

Tailings Dams & Risks

Mining Investment & Sustainable Development

Mining & Sustainable Development 2000



Cyanide Code



The "**International Cyanide Management Code For The Manufacture, Transport and Use of Cyanide In The Production of Gold**" (Cyanide Code) is a voluntary industry program for the gold mining industry to promote:

Responsible management of cyanide used in gold mining
Enhance the protection of human health, and
Reduce the potential for environmental impacts.

Companies that become signatories to the Code must have their operations audited by an independent third party to demonstrate their compliance with the Code.

Audit results are made public on this web site to inform stakeholders of the status of cyanide management practices at certified operations.



MINING FOR CLOSURE

MINING FOR CLOSURE

POLICIES AND GUIDELINES FOR
SUSTAINABLE MINING PRACTICE
AND CLOSURE OF MINES



osce



**Industry and Environment, Special Issue 2000,
Mining and Sustainable Development II:
Challenges and Perspectives.**

Author:

Format: Magazine

Language: E

Pages: 98

Price: US\$15

Produced by: UNEP-DTIE

Stock No: RW23-SPEC1

ISSN: 03789993

Year: 2000





Sustainable Development and the Future of Mineral Investment

The book aims to reach a wide audience of readers to help explore and analyse how the principles of sustainable development can be extended to mineral enterprises. The content of the book has been maintained at mainly a non-technical level, understandable by readers who are not expert.

Format: Book
Language: E
Pages: 213
Price: US\$50
Produced by:
Stock No: 2697
ISBN: 92 807 1913 0
Year: 2000





Tailings Dams: Risks of Dangerous Occurrences - Lessons Learned from Practical Experiences

Reviews some 230 tailings dam accidents of the past 50 years, with examples of effective remedial measures, with the aim of averting similar events in the future. Includes detailed analysis of past accidents, focusing on lessons learned. Intended chiefly for mining engineers.

Author:

Format: Book

Language: E

Pages: 144

Price: US\$20

Produced by: UNEP with ICOLD.

Stock No: 2891

ISBN: 92 807 2053 8

Year: 2001





APELL for Mining: Guidance for the Mining Industry in Raising Awareness and Preparedness for Emergencies at Local Level (Technical Report 41)

Introduces the generic objectives and organizational framework of UNEP's APELL programme, covers risk factors specific to the mining industry, and describes how APELL can be applied to the mining industry. Case studies illustrate the consequences of mining accidents.

Format: Book
Language: E
Pages: 67
Price: US\$50
Produced by: UNEP
Stock No: 2869
ISBN: 92 807 2035 X
Year: 2001





Best Practice Environmental Management in Mining: Training Kit

The Training Kit is designed to help trainers plan and deliver effective training aimed at improving the environmental performance of the mining industry. The different volumes in the Kit give extensive references to further information, including that which is available from the Best Practice Environmental Management (BPEM) series e-booklets.

Author:

Format: CD-ROM

Language: E

Pages: 336

Price: Free

Produced by: UNEP/Environment Australia

Stock No:

ISBN: 0 642 99631 8

Year: 2002





Industry as a Partner for Sustainable Development - Coal

Reviews progress made by the coal sector in implementing Agenda 21.

Author: World Coal Institute
Format: Book

Language: E
Pages: 76
Price: US\$20
Produced by: UNEP
Stock No:
ISBN: 92 807 2180 1
Year: 2002





Mining, Environment and Development

Compilation of recent documents and publications by the United Nations and other organisations on the subject of mineral resources, mining and sustainable development.

Author:

Format: CD-ROM

Language: E

Pages:

Price: US\$20

Produced by: UNEP/UNCTAD

Stock No: 3054

ISBN: 92 807 2180 1

Year: 2003





**Regulatory Approaches for the 21st Century –
How Government Regulations Interface with
Voluntary Initiatives to Improve the
Environmental Performance of the Mining Sector**

Issues discussed at a workshop on Regulatory
Approaches. Toronto, Canada, 13-15 March 2002.

Author:
Format: Book
Language: E
Pages: 32
Price:
Produced by: UNEP
Stock No:
ISBN:
Year: 2002

