



# *Risk Reduction of Mining Accidents in the Tisa Basin*

*Adriana Eftimie – Director PIU  
National Agency for Mineral Resources*

*NATO/CCMS Pilot Study “**Prevention and Remediation Issues In Selected Industrial Sectors Pilot Study**”*

*Baia Mare, September 7 – 11, 2003*

# *Hazard and Risk Mitigation and Emergency Preparedness Project*

## Objective

- To assist the Government to reduce the financially, social, environmental and economical vulnerability of natural disasters and mining accidents causing water pollution



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## *Hazard and Risk Mitigation and Emergency Preparedness Project (cont')*

### Components

- **Strengthening of technical and institutional capacity in the disaster management and emergency response domain**
- **Implementation of risk reduction measures associated with floods, land sliding and earthquakes**
- **Dam safety improvements**
- **Establishment of an insurance system against disasters**
- **Risk reduction of mining accidents in the Tisa Basin**



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# Risk Reduction of Mining Accidents in the Tisa Basin

## Objective

- Mitigate the potential environmental impacts of accidental spills and release of hazardous materials into the Danube river basin as a consequence of mining activities



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## Activities

1. Development of an environmental monitoring system
2. Priority prevention and remediation projects
3. Training related to environmental guidelines for tailing dams and waste dumps facilities
4. Regional mine spill disaster response system
5. Promotion of transboundary cooperation in the Tisa basin



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## 1. Monitoring system

- **Establishment of a baseline system for water quality, streams and aquatic ecosystems altered by persistent sources of mine and other anthropogenetic sources of contaminants**
- **Establishment of additional checking points for monitoring the effects produced by current and future mining activities, including early alert systems for emergency situations**
- **Strengthening of institutional capacity through endowment with monitoring equipment and training of specialists of relevant authorities**



## 2. Prevention and remediation projects

- Establishment of priority investment programs
- Improvement of safety and management of tailings dam and waste dumps facilities



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## General context of priority sites intervention



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## Main problems identified

- Continuous contamination due to acidic waters generated by waste dumps



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## Main problems identified (cont')

- Acidic water seepage from the toe of the dams



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## Main problems identified (cont')

- Contamination with hazardous substances, resulted from the processing process, and debris, as a consequence of extreme meteorological events



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## Main problems identified (cont')

- Waste dumps stability



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## Main problems identified (cont')

- Tailings dams stability



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## Proposed actions

- Waste dumps and tailing dams facilities stabilization
- Stop/reduce the acidic waters drainage
- Treatment of acidic waters
- Improvement of the monitoring and control system
- Replacement of pumping equipment with a more performing one
- Remediation of surrounding areas contaminated with hazardous substances and acidic waters
- Development or improvement of the emergency response procedures



### 3. Environmental guidelines for tailing dams and waste dumps facilities

- Development of guidelines for design and management of tailings dam and waste dumps facilities
- Training of the specialists of the relevant local and central authorities, as well as of the mining companies and of the mining research institutes, in the implementation of the environmental guidelines for design and management of tailings dam and waste dumps facilities



## 4. Regional mine spill disaster response

- Improvement of the effectiveness of the current system for contingency planning, emergency response, awareness, preparedness and communication
- Development of a regional mine spill disaster response system to be implemented by the mining companies located along Someş and Mureş rivers basins draining into Danube river



## 5. Promotion of transboundary cooperation in the Tisa basin

- **Initiation and promotion of the regional cooperation and dialogue with riparian countries in order to facilitate the development of a regional policy of cooperation regarding the management of tailings dam and waste dumps facilities from the Danube river basin**
- **Participation of Romanian experts and decision makers at regional events which promote transboundary cooperation regarding integrated water management in the Tisa basin and their involvement in regional studies**
- **Organization of seminars, workshops and meetings with downstream countries**



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