







## **INTERMIN: YOUR SPECIALIZED PORTAL OF GLOBAL RAW MATERIALS TRAINING**

Prof. Manuel Regueiro y González-Barros

Antonio Alonso Jimenez

Geological Survey of Spain



Slim

Sustainable Low Impact Mining solution for exploitation of small mineral deposits based on advanced rock blasting and environmental technologies

www.igme.es





### Who are we?

### The Instituto Geológico y Minero de España (Geological Survey of Spain)

- Senior (founded 1849) public research autonomous institution attached to the Ministry of Education and Science
- Main Earth Sciences Research Centre of Spain. Total 389 employees, 291 graduates
- Specialized in various fields of activity such as geology, environment, hydrogeology, mineral resources, natural hazards and land use planning
- IGME facilities, including its headquarters, project offices in several places around the country, laboratories, warehouses, drill core repository, library and museum, are equipped with advanced technology and technical resources
- IGME is the national centre for the creation of knowledge infrastructure, information and R&D in Earth Sciences





- Objectives
- Expected results
- The Consortium
- Project structure
- Global coverage
- Technical description & implementation
- Impact





- 1. <u>Map skills and knowledge in the EU and the third countries</u>
- 2. <u>Identify key knowledge gaps and emerging needs</u>
- 3. <u>Develop a roadmap for improving skills and knowledge</u>
- 4. <u>Develop common metrics</u> and reference points for quality assurance and recognition of training
- 5. <u>Develop a comprehensive competency model for</u> <u>employment</u> across the primary and secondary raw materials sector
- 6. <u>Establish common training programmes in the raw</u> materials sectors
- 7. Creation of a <u>self-sustainable long-term lasting</u> <u>international network of training centres for professionals</u> <u>in the raw materials sector</u>



### OBJECTIVES

Map skills and knowledge in the EU and in mining advanced countries	identify key knowledge gaps and emerging needs	Develop roadmap for improving skills and knowledge	Establish common training programmes in the raw materials sectors	Create a self- sustainable long- term lasting international network of training centres for professionals
Effective knowledge of European and international context	Effective knowledge of professionals' skills, employers needs and training offers	Global expertise in continuing professional development		
IGME EGS BRGM ASGMI UPM EFG MUL	EGS BRGM LPRC EFG MUL CCOP AGI	EFG MUL AGI UQ YES		
AGI UQ PGI YES SGU	YES			



- Implementation of the Raw Materials Initiative and achieving the objectives of the EIP on Raw Materials, in particular in terms of establishing and maintaining strong and sustainable relationships with the leading training institutions in the relevant countries;
- Increasing the EU competence and expertise in the field of the primary and secondary raw materials;
- Improved availability of qualified and skilled workforce leading to higher competitiveness of the EU raw materials industry;
- Enhancing the possibility for new cross-sectorial innovation;
- Fostering international cooperation;
- Generate a feasible, long-lasting international network of technical and vocational training centres for raw materials' professionals.



#### **PILLAR 1. THE PROFESSIONALS**

- European Federation of Geologists (EFG) (WP3)
- American Geological Institute (AGI)
- Polish Association of Mineral Asset Valuators (PAMAV)
- Young Earth Scientists Network (YES Network)

### PILLAR 3. THE TRAINING AND EDUCATIONAL ORGANISATIONS

- Leoben University (WP1)
- Polytechnic University of Madrid (WP4)
- Universities of Queensland and Western Australia
- La Palma Research Center (WP2)
- Coordinating Committee for Geoscience Programmes in East and Southern Asia (CCOP)

#### **PILLAR 2. THE EMPLOYERS**

- EuroGeoSurveys (WP5)
- Association of Iberoamerican Geological and Mining Surveys (ASGMI)
- Geological Survey of Spain (IGME-SP) (WP6) (WP7)
- Geological Survey of Greece (IGME-GR)
- Geological Survey of Hungary (MFGI)
- Geological Survey of Portugal (LNEG)
- Geological Survey of Sweden (SGU)
- Geological Survey of France (BRGM)
- Czech Geological Survey (CGS)
- GeoInform of Ukraine (SRDE)

#### **ADVISORY BOARD**

- International Association for Promoting Geoethics (IAPG)
- European Technology Platform on Sustainable Mineral Resources (ETP SMR)
- IndustriALL Global Union
- European Association of Mining Industries, Metal Ores & Industrial Minerals (Euromines)
- Anthropogenic Resources Working Group UNECE
- The United Nations Environment Programme (UNEP)
- United Nations Educational, Scientific and Cultural Organization (UNESCO)
- United Nations Development Programme (UNDP)
- United Nations Economic Commission for Africa (UNECA)
- International Union of Geological Sciences (IUGS)







### GLOBAL COVERAGE



GLOBAL AUDIENCE OF APPROXIMATELY 550 000 PROFESSIONALS FROM 5 CONTINENTS



#### CONTEXTUAL ENVIRONMENT AND LOGICAL APPROACH OF INTERMIN





### ACTIONS

#### ACTIONS

- Defining a skills catalogue for the raw materials sector (WP1);
- **Mapping and collecting worldwide information** on existing technical and vocational training courses for raw materials industry professionals including mid-level and professional skills, alongside high-level skills (WP1);
- Development of a international repository of existing training courses for the raw materials sector (WP1);
- Identification of existing gaps in education and training outcomes, considering existing and future employers needs (WP2);
- **Integration** of the appraisal of existing and emerging skills needs, and **recommendations** from past and existing EU projects on skills provision for the raw materials sector, in a robust roadmap on skills development (WP2);
- Definition of a comprehensive competency model for employment across the raw materials sector (WP2);
- Definition of **best training practices** and reference points for quality assurance and international recognition of training (WP3);

Immediate **enhancement of existing training programmes**, by filling existing gaps (introducing new topics) and incorporating training best practices (WP3);

- Development of joint technical and vocational training programmes for professionals (WP3);
- Designing the **international network** of raw materials training centres, and the corresponding strategic plan and infrastructure (WP4);
- Create an **Online Educational platform** for the raw materials sector (WP4);
- Expand the international network of raw materials training centres (WP4 and WP5);
- **Dissemination** and engagement with current and new stakeholders (WP5).



#### OUTPUTS

- **Definition of existing and emerging skill gaps** in the raw materials sector (D1.1, D1.2, D2.1)
- Creation of a 'Integrated Competency Model' for employment across the raw materials sector, defining the required mixes of skills, with capacity to proactively anticipate and adapt to changes in the skills mix (D2.3)
- Definition of a 'International Qualification Framework' for the raw materials sector, fostering the balance between global demand of professionals (by employers) and the offer of alumnae/graduates from mid-level, technical and professional courses (D3.1, D3.2, D3.3)
- Definition of a 'Action Plan' to close skill gaps and enhance existing education and training programmes for professionals (D3.4)
- Creation of a '**Roadmap**' to tackle medium and long term skills' needs (D2.2)
- Alignment of training agendas and curricula in Europe and worldwide, and development of cooperation plans among training providers and between them, the industry and professional organisations (D3.5, D4.4)
- Leveraging international cooperation on the provision of talent into the raw materials sector by setting an international network of raw materials training centres (D4.1, D4.2)
- Optimized interaction and collaboration among training centres throughout an open online Educational platform (D4.4)
- Promotion of continuous professional development in the primary and secondary materials sector (D3.3)



INTERMIN will tackle the shortage of a raw materials' skilled workforce in Europe by advancing a holistic approach, taking into consideration:

- 1) current and future employers' needs (assuming different contexts and technological scenarios) and available skills provision;
- 2) The dynamic balance of demand and educational supply in different world regions; and
- 3) The alignment of training and industry cyclicity

The methodological approach combines collection of primary data (surveys, interviews) and secondary data (desk research and benchmarking), to advance of a new paradigm for optimized interaction and collaboration between training centres, employers and professionals.

The project will optimize future interaction and collaboration in Europe and internationally with the help of the **INTERMIN online educational platform**.





**European Qualifications Framework** 





Building blocks of INTERMIN competence model







### FROM SKILL CATALOGUE ONWARDS





### INTERMIN COMPETENCE MODEL

#### Level 5 - Mineral Exploration

#### Is ready to:





### INTERMIN COMPETENCE MODEL



#### Is ready to:







IT infrastructure of the INTERMIN portal (https://portal.interminproject.org/



### INTERMIN PORTAL: https://portal.interminproject.org/



C Explore Institutions

A Intermin Network



S Explore Programs

#### **Q** Explore Sites

### MINING STUDIES NETWORK

### World Mining Knowledge

Intermin is a Database about Mining Training. We collect knowledge about Mining Teaching all around the world. Rank the best programs.

EXPLORE PROGRAMS















### **Institutions Network**

Intermin is also a wolrd Wide Network. Our members are Institutions around the world offering mining knowledge programs.

EXPLORE INSTITUTIONS









#### Join Intermin Network

If your institution has training programs about Mining, please join Intermin Network and get into the database

JOIN INTERMIN NETWORK !



#### Select study areas fit best your interest

(click areas for filter an add to ranking below)

#### BUSINESS MANAGEMENT

2	1.1 Mining in a global environment
	1.2 Production analysis and mine optimisation
	1.3 Organisational structures
	1.4 Financial operations and production costs
	1.5 Managing mining operations - Monitoring and compliance
	1.6 Management
	1.7 Risk management

#### **GEOLOGY EXPLORATION RESOURCES & RESERVES**

2.1 General Geology / Geography	
2.2 Applied Geology	
2.3 Exploration and sampling	
2.4 Mineral deposit modelling	
2.5 Mine feasibility studies	

MINING EQUIPMENT & SYSTEMS

#### MINING GEOMECHANICS & TECHNICAL MINE DESIGN

3.	1 M	odellir	ng,	ana	lysi	5 8	and	desi	gп
		1.1.1	_						_

- 3.2 Implementing designs and plans
- 3.3 Integrated mine design
- 3.4 Mine rehabilitation and closure
- 3.5 Monitoring ground stability

3.6 Drilling, blasting and rock cuttingExplosives

#### MINING METHODS

4.1 General mining methods	
4.2 Surface mining methods	
4.3 Underground mining methods	
4.4 Fill systems	
4.5 Reclamation	

5.1 General Mining equipment and systems	
5.2 Electrical systems	
5.3 Loading systems	
5.4 Haulage systems	
5.5 Mining software	

#### MINING SERVICES

8.1 General services and planning	
8.2 Dewatering and Mine drainage and storage systems	
6.3 Water treatment	
6.4 Ventilation	
6.5 Power supply systems	
6.6 Communications systems	
6.7 Surveying	

#### MINERAL PRODUCTION & PROCESSING

7.1 Feed systems and planning
7.2 Grade control
7.3 Comminution and sizing
7.4 Concentrator processes
7.5 Further treatment
7.6 Recycling and secondary mineral raw materials. Circular Ecomy

#### GENERIC, HEALTH AND SOCIAL TASKS

8.1 Environment	
8.2 Workplace health and safety	8
8.3 Communication	
8.4 Creative thinking, problem solving and research	
8.5 Sustainability	
8.6 Self-management	
8.7 Working with people	

93 Programs best matching areas

#### SOCIALPERFORMANCE

9.1 Acquiring and using social data and baseline information	ation
9.2 Monitoring and evaluating social projects	
9.3 Engagement with Indigeus peoples	
🗹 9.4 Grievance management,Prevention & managem	ent of conflict
9.5 Cultural heritage management	
9.6 Community engagement	
9.7 Agreements & implementation	
9.8 Resettlement & influx management	
9.9 Regional development	
9.10 Local employment and workforce development	
9.11 Community enterprise development	

The INTERMIN portal allows to make simple searches of the more adequate training by study programs



#### RANKING OF PROGRAMS BY AREAS



#### Filtered Areas & Subareas









Search by institutions

-





#### Search by geographical location





The portal will also be linked to a dedicated webpage (hyperlink) detailing university programmes (Bachelor and Master) offered by European Universities (GUIDE)





# Populate the training centers database: reach over 1000

- Diffusion of the portal
- Business plan

# THANKS VERY MUCH !!







Instituto Geológico y Minero de España