

PROGRESS REPORT

Deliverable 6.4



Horizon 2020

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1. INTRODUCTION

This second progress report presents the preliminary findings during the last 12 months of research. The objective of this report will let all project's stakeholders to know the current situation and evolution of the project.

1.1 SUMMARY

INTERMIN will create a self-sustainable long-term lasting international network of training centers for professionals. The project involves educational and research institutions in the EU and the leading counterparts in third countries, based on specific country expertise in the primary and secondary raw materials sectors. The network will map skills and knowledge in the EU and the third countries, identify key knowledge gaps and emerging needs, develop roadmap for improving skills and knowledge, as well as establish common training programs in the raw materials sectors. In line with the EU's strategy for international cooperation in research and innovation (COM (2012)497), the consortium will seek international collaboration, fostering and exploring synergies with the relevant EU Member States initiatives.

1.2 PROJECT SCOPE

The project has the following specific objectives:

1. To develop common metrics and reference points for quality assurance and recognition of training;
2. To develop a comprehensive competency model for employment across the raw materials sector;
3. To introduce an international qualification framework for technical and vocational training programs;
4. To create a conceptual framework for the development of joint educational training programmes based on present and future requirements by employers and
5. To create and launch a joint international training programme by a merger of competences and scope of existing training programmes in order to optimize future interaction and collaboration in Europe and internationally with the help of the INTERMIN online educational platform. Further, to build up this network INTERMIN will signpost critical disconnects between available education and employers'

needs, and it will advance short and medium-term actions to close current skills' gaps and enhance existing education and training at the international level.

On the long-term, INTERMIN will enable mutual recognition of curricula, and will foster cooperation between employers, educational institutions and professional organizations to craft technical and vocational training programmes that offer continuing professional development and address future qualifications and skills' needs.

The INTERMIN international network of technical and vocational training centers for professionals will ensure that common resources are leveraged to their best potential to create training programmes that match the needs of raw materials' employers and professionals. Collaboration will take full advantage of specialization/capabilities of the network members, communication technologies and globalization, hence using the Educational platform to deliver interactive online services that provide trainers and learners with information, tools and resources to support and enhance training delivery and management.

1.3 PROJECT TECHNICAL DESCRIPTION & IMPLEMENTATION

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 cyclicality.

The methodological approach combines collection of primary data (surveys, interviews) and secondary data (desk research and benchmarking) for advancing a new paradigm for optimized interaction and collaboration between training centres, employers and professionals. The paradigm of INTERMIN will integrate an international qualifications framework (based on the European

Qualifications Framework) and a competency model, both tailored for the raw materials sector. The foresight on future employers' needs will follow a qualitative approach, combining scooping of scenario field

and cause and effect analysis with projections and cross impact analysis using modelling software. This will allow anticipation and leveraging of change, and the development of a robust roadmap on skills provisioning for the raw materials sector. The combination of desk research, experts' insight, and competitive and functional benchmarking will feed in an Action Plan on the enhancement of existing education and training and the development of joint international technical and vocational training programmes. The delivery of those programs will be supported by an IT platform that will provide trainers and learners with information, tools and resources to support and enhance training delivery and management. This methodology is appropriate to generate a long-lasting international cooperative network of technical and vocational training centres. A detailed description of the implementation of the project, phase of the project, main milestones and outcomes are included in the table included in the next page:

CALLAIMS	APPROACH	ACTIONS	OUTPUTS	IMPACTS
<p>Build on international cooperation;</p> <p>Map skills and knowledge in the EU and in mining advanced countries;</p> <p>Identify key knowledge gaps and emerging needs;</p> <p>Develop roadmap for improving skills and knowledge;</p> <p>Establish common training programmes in the raw materials sectors;</p> <p>Create a self-sustainable long-term lasting international network of training centres for professionals, involving educational and research institutions in the EU and the leading counterparts in third countries, based on specific country expertise in raw materials.</p>	<p>Holistic approach, combining:</p> <ul style="list-style-type: none"> • Match-making between skills provision (available education) and employers' needs; • Balance of regional demand and educational supply; • Alignment of training and industry cyclicality. <p>Advance of a paradigm for optimized interaction and international collaboration between training centres, employers and professionals.</p>	<p>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</p> <p>professionals - including mid-level and professional skills, alongside high-level skills (WP1);</p> <p>Development of an international repository of existing training courses for the raw materials sector (WP 1);</p> <p>Identification of existing gaps in education and training outcomes, considering existing and future employer's needs (WP 2);</p> <p>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 (WP 2);</p> <p>Definition of a comprehensive competency model for employment across the raw materials sector (WP2);</p> <p>Definition of best training practices and reference points for quality assurance and international recognition of training (WP3);</p> <p>Immediate enhancement of existing training programmes, by filling existing gaps (introducing new topics) and incorporating training best practices (WP3);</p> <p>Development of joint technical and vocational training programmes for professionals (WP 3);</p> <p>Designing the international network of raw materials training centres, and the corresponding strategic plan and infrastructure (WP4);</p> <p>Create an Online Educational platform for the raw materials sector (WP 4);</p> <p>Expand the international network of raw materials training centres (WP 4 and WP5);</p> <p>Dissemination and engagement with current and new stakeholders (WP 5).</p>	<p>Definition of existing and emerging skill gaps in the raw materials sector (D1.1, D1.2, D2.1)</p> <p>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);</p> <p>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);</p> <p>Definition of a 'Action Plan' to close skill gaps and enhance existing education and training programmes for professionals (D3.4);</p> <p>Creation of a 'Roadmap' to tackle medium and long term skills' needs (D2.2);</p> <p>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);</p> <p>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);</p> <p>Optimized interaction and collaboration among training centres throughout an open online Educational platform (D4.4);</p> <p>Promotion of continuous professional development in the primary and secondary materials sector (D3.3).</p>	<p>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;</p> <p>Increasing the EU competence and expertise in the field of the primary and secondary raw materials;</p> <p>Improved availability of qualified and skilled workforce leading to higher competitiveness of the EU raw materials industry;</p> <p>Enhancing the possibility for new cross-sectorial innovation;</p> <p>Fostering international cooperation;</p> <p>Generate a feasible, long-lasting international network of technical and vocational training centres for raw materials' professionals.</p>

2. RESULTS ACHIEVED IN THE LAST 12 MONTHS (20/05/2019 - 19/04/2020)

2.1 WP 1 – WORLDWIDE MAPPING OF EDUCATIONAL- RESEARCH PROGRAMS (ATLASES)

WP 1 has finished all its works and uploaded all requested deliverables during 2018 and 2019:

Skills catalogue (IGME): This is a comprehensive document including the skills required in the mining sector as well as main learning outcomes from the University courses. For the drafting of the document we compiled experts opinions from different countries and stakeholders groups (mining companies, research institutions and training centers and universities) using as a base several existing docs (Australian Qualification Framework, Spanish Agency for the Evaluation of the Quality and Professional Accreditation docs). The deliverable designed a new hierarchical logic of the skills-to-job description model, so the system could be used in the future INTERMIN platform adding the possibility of dropdowns menus, more suitable for the online QUESTIONNAIRE.

Although the WP officially ended in January 2019 they kept working on the deliverables and tasks until end of March to include the results from the Madrid meeting that was organized in January 2019.

The survey (<https://intermin.limequery.com/324595?lang=en>) was left opened until September 2019 in order to include more educational institutions-

The raw data of the survey results are available as a xls-file, either on the INTERMIN - Intranet, or upon personal request.

The results of the questionnaire and content of the database build the basis for further activities in subsequent workpackages of INTERMIN –Project, in particular the works of the new portal by WP4.

2.2 WP 2 – RAW MATERIALS SECTOR SKILLS, GAPS AND NEEDS (GAPS)

The deliverable 2.1 (LPRC) *Report on Skills Gaps* ended in July 2019 (month 17) the main information of this deliverable were focus in the ‘Raw Materials sector skills, gaps and needs’ work package looks into skills that employers are looking for and are likely to be in demand in the future. Gaps are identified in professional education and training against market demands assessed through three different timeframes and corresponding methods:

- Short-term (Horizon Europe): Desk research;
- Medium-term (2030): Focus Group sessions;
- Long-term (2050): Delphi survey.

The results from this research are interconnected with the development of a ‘Integrated Competency Model for employment across the raw materials sector’ (Deliverable 2.2) and will be followed by a ‘Roadmap on skills provisioning for the raw materials sector’ (Deliverable 2.3).

The Deliverable 2.2 (LPRC) finished in December 2019, integrated competency model for employment across the raw materials sector. This deliverable included a Competency Model and corresponding recommendations for the development of future training agendas and curricula on raw materials in Europe and worldwide.

Future needs depend on social and economic hypotheses shaped by key drivers of change e.g. geopolitical orientations, circular economy, resource consumption patterns etc. Scenarios will be developed about such variables considering different hypotheses over a approximate 15 years’ timeframe. The current speed of social, economic, geopolitical change and transitions are so fast that scenarios over a longer timeframe do not seem appropriate in our case.

Deliverable 2.3 Roadmap on skills provisioning for the raw materials sector. This document uploaded in October 2019, synthesizes the assessments carried out in Work Package 2 (Deliverables 2.1 and 2.2) and established a time-based depiction of skills provisioning for the raw materials sector as well as pertinent indicators to be monitored. So far, Work Package 2 was able to identify i) where we are now and ii) where we are going. This deliverable aims at supporting the exploration of i) what are the ways of getting there and ii) what should we do. Annex A depicts a time-based visual roadmap for skills provisioning in the raw materials sector.

2.3 WP 3 – TOWARDS ENHANCED TRAINING PROGRAMS (RESPONSE)

WP 3 during these last 12 months has focused on accelerating the adaptation of existing training programs and the development of new training modules that address the immediate and emerging needs of the industry.

To advance the alignment of training agendas and curricula worldwide, it is necessary to compare training processes and training results, thereby establishing common benchmarks for quality assurance and related recognition of teaching and training.

Deliverable 3.1 *International Qualification Framework for the raw materials sector*, was uploaded on March 2019. This deliverable defines the key activity areas and competencies in the mineral raw materials sector and advances a sectoral qualifications framework (SQF-RM - Figure 1), that can be used globally. It also includes qualification level descriptors and governance and quality control measures.

Deliverable 3.2 *Report on tailored metrics and reference points for quality assurance and international recognition of training on raw materials related topics* was completed in July 2019 and uploaded in August 2019. It advances a quality assurance (QA) system for education and training in the raw materials area, leveraging the relevance, equity and efficiency of education and training systems pertinent to the raw materials sector. The QA system uses the self-monitoring process and indicators prescribed by the European Quality Assurance Reference framework for Vocational Education and Training. The QA system for education and training in the raw materials area includes 32 quality standards and 86 guidelines. It also includes simplified metrics and reference points, focused on system components for measurement of performance. The metrics address the effectiveness of the QA system, its excellence and its capacity to respond promptly to changes in context (timeliness). The governance model suggested assumes that the adoption of the QA system will be voluntary and that the responsible institution for its implementation should be an independent international agency dealing with education and labour.

Deliverable 3.3 *Best practice guidelines for training in the raw materials sector*, was completed in July 2019 and uploaded in August 2019.) This deliverable outline best practice for education and training programmes and the essential functions of a management system capable of enhancing the effectiveness of these programmes.

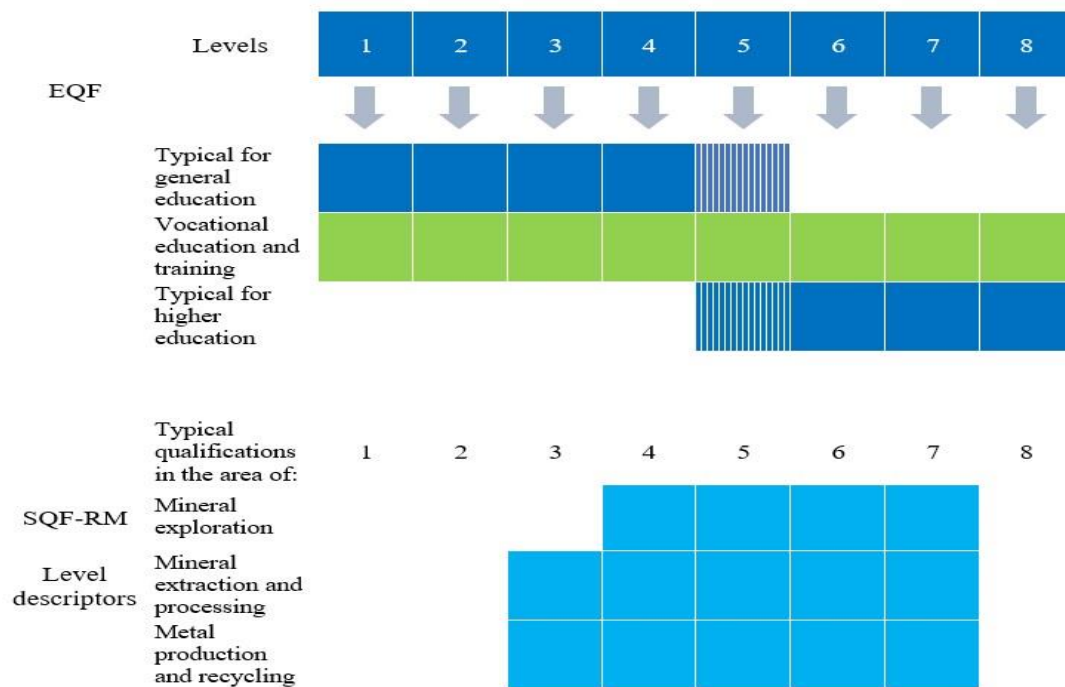


Figure 1: Architecture proposed for the SQF-RM, considering the qualification levels defined by the European Qualifications Framework (EQF).

2.4 WP4 DEVELOPING AN INTERNATIONAL NETWORK OF TRAINING CENTRES (LEVERAGE)

This WP will define the scope, create the agenda and investigate sustainability options for the long-term operation of a network dedicated to international cooperation and knowledge sharing by raw materials training centres.

The Network has been based in the work made in the other work packages (especially WP1, WP2 and WP3) to improve the framework conditions and competitiveness of raw materials training and education in the EU and globally.

The aim is to tackle longer-term challenges (as identified under WP2.1.2 and 2.1.3) by means of continued international cooperation and materializing a feasible, long-lasting international network of technical and vocational training centres for raw materials' professionals. This will require the definition of a clear mission, vision, infrastructure requirements and procedures.

The EFG has developed tasks T4.1 Mission design and positioning whilst UPM is developing T4.2 Creating and implementing the Network infrastructure.

Task 4.1. Mission design & positioning

This task started with the definition of a mission statement of the international network of raw materials education and training centres that will act as a permanent body dedicated to exchange information and knowledge on raw materials education and training, carefully positioned to complement and work in synergy with other international training programmes and centres active in the raw materials sector.

The starting points of this task were:

- The global repository of training programs and networks on raw materials in the EU and advanced mining countries (D1.3, M12),
- The identification of synergies, skill gaps and overlaps with existing EU/national/international training programmes, and
- The assessment of employer's needs identified in WP2 (D2.1 and D2.2, M18).

This task has produced D4.1. *Strategic Plan of the International Network of raw materials training centres* uploaded in February 2020. This deliverable has addressed:

- A definition of an overall strategy for the implementation and operation of the network, considering its long-term view and potentially emerging scenarios that can affect raw materials priorities and professional education;
- A definition of the network's mission and goals, taking into account the overall strategy;
- A definition of the network's governance model;
- An outlook of collaborative strategies, and an implementation agenda.

Task 4.2: Creating and implementing the Network infrastructure

Task 4.2.1: Creating the IT infrastructure (Actual situation)

The next step has been the establishment of an Information Catalogue that will allow for searching, consulting and downloading the deliverables and the individual components of project deliverables, as well as information produced by external training providers. The catalogue will contain international training providers' metadata, and it will be established as a “distributed catalogue” where all Data Providers can create and modify their own metadata.

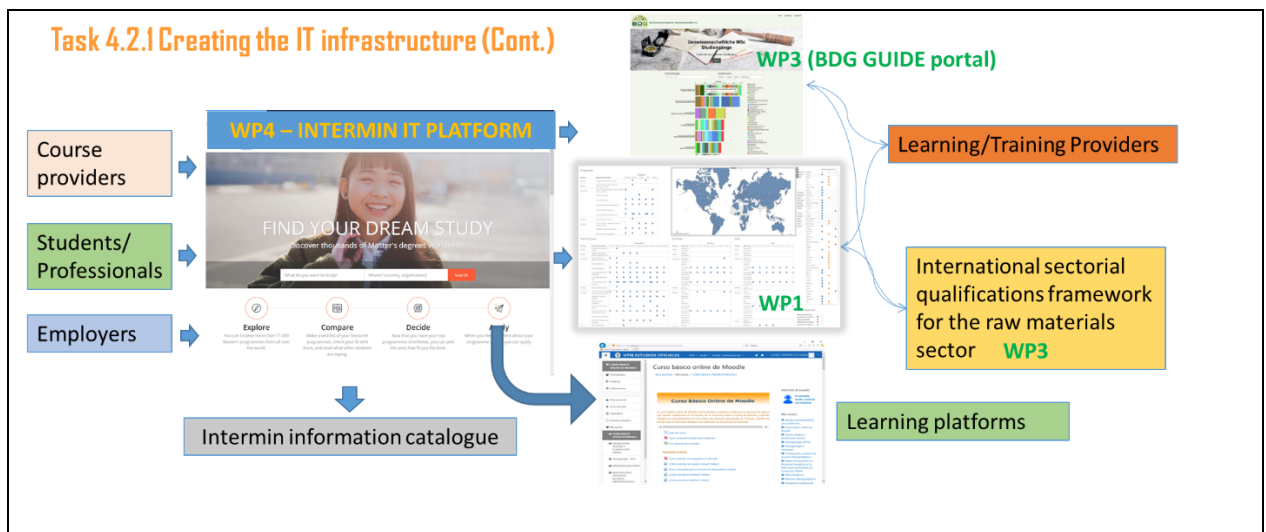


Figure 2. Scheme of the IT infrastructure of the INTERMIN portal

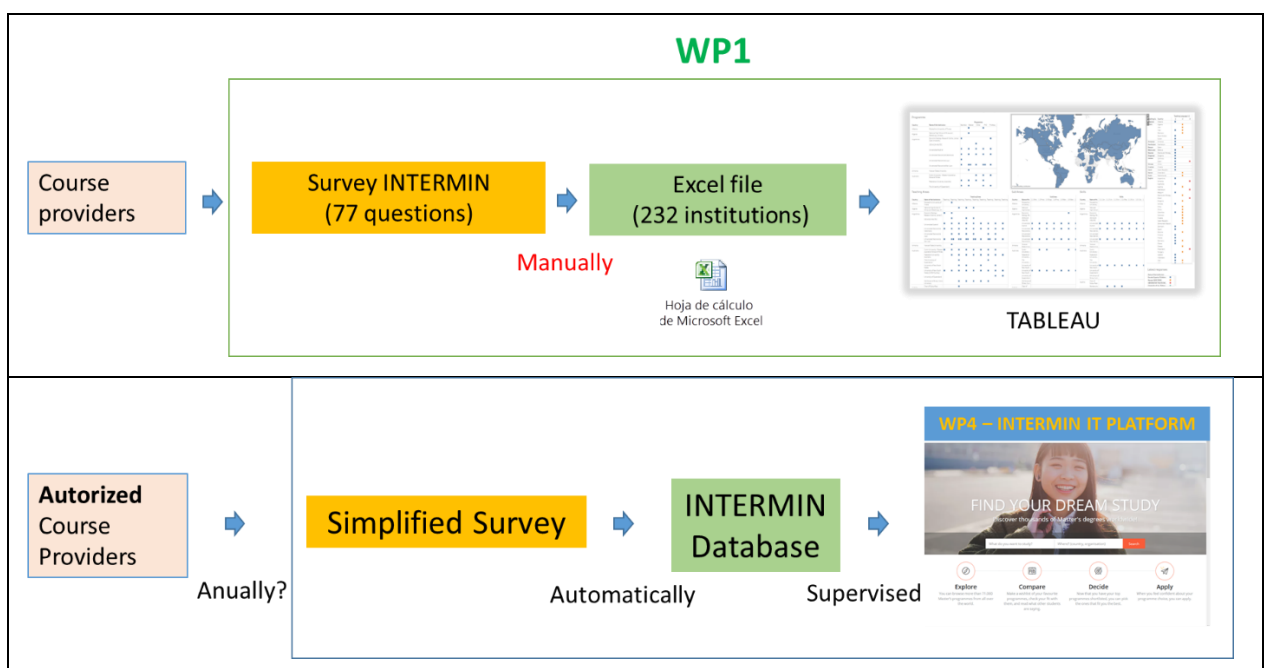


Figure 3. Model of data transfer from Tableau (WP1) to the new portal

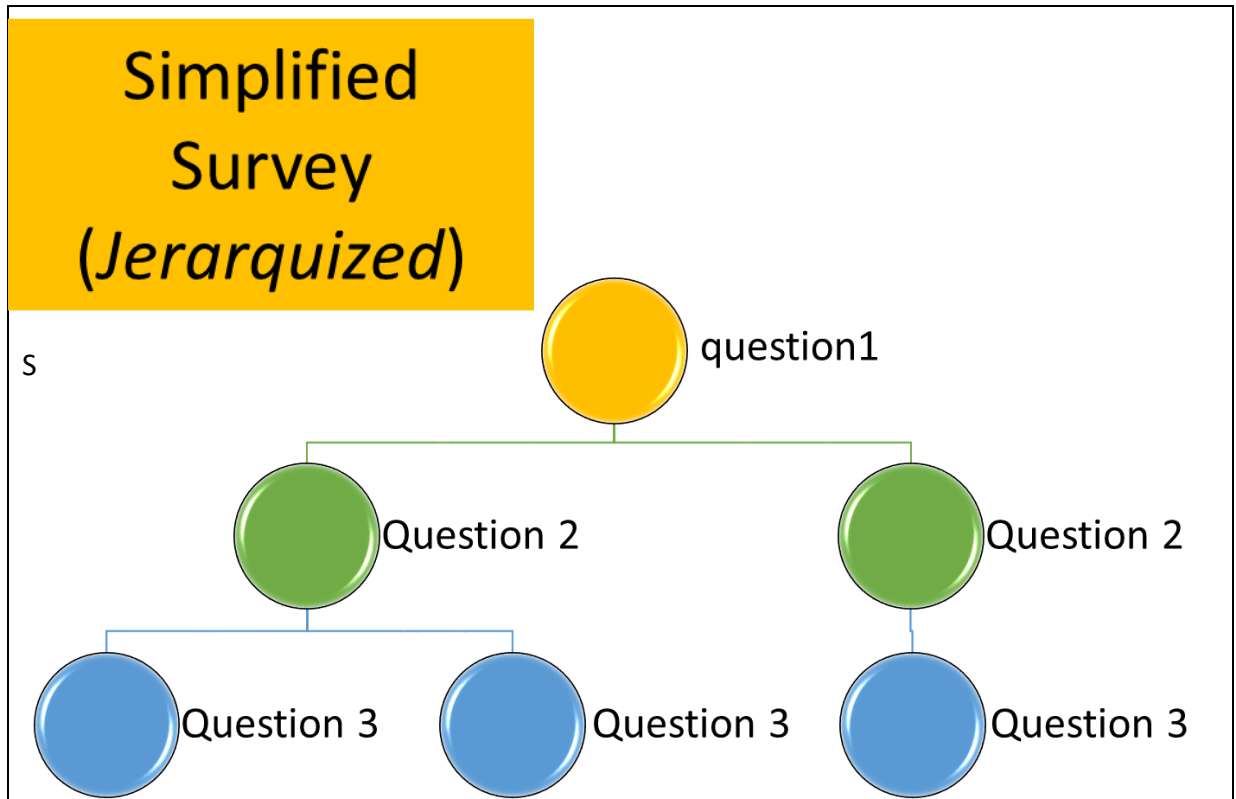


Figure 4. Simplified survey for Course/Data providers.

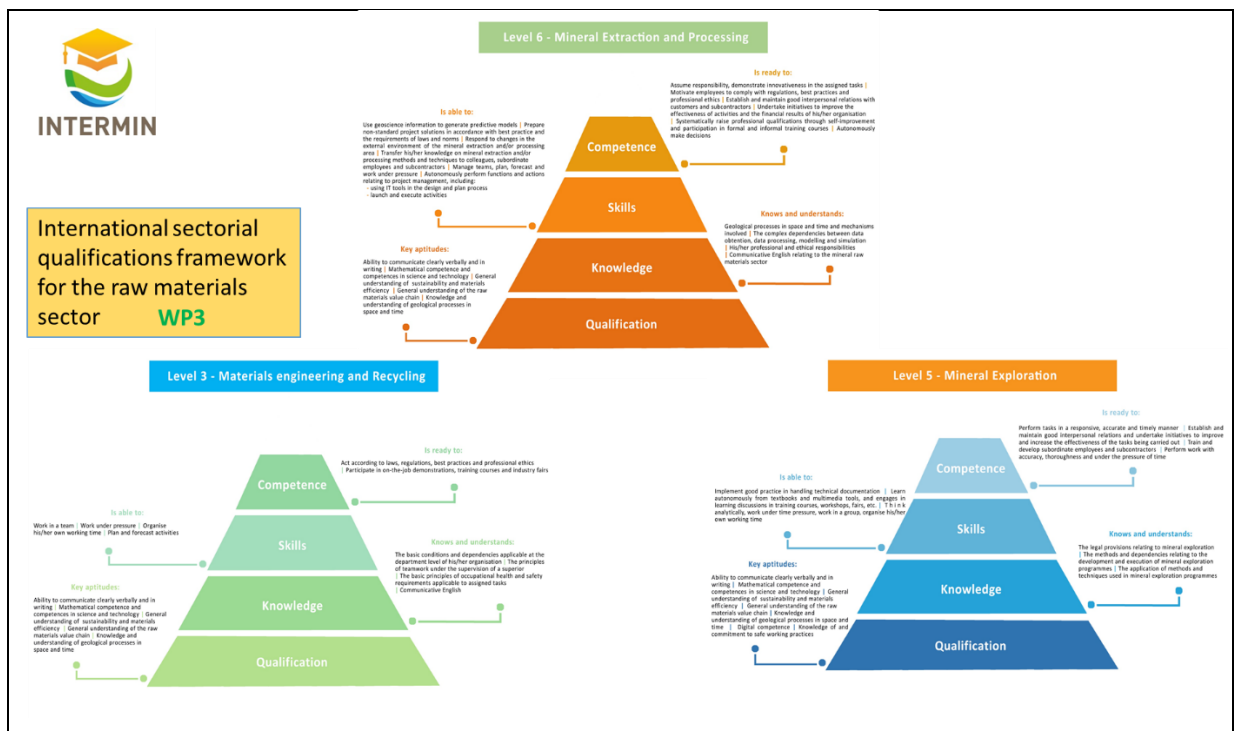


Figure 5. Model of sectorial qualification framework to include in the portal (from WP3 results)

Other aspects to be included in the future portal are:

1. Mobility, language, internships, etc.

2. Where to study abroad
3. Tools to help you decide:
 - Best fit (academic, geographical and cost aspects)
 - Student's reviews (Alumni)
4. Tips to apply to a particular master degree

The system will also address:

1. Comparison of academic skills for different degrees and learning programs
2. International sectorial qualifications framework
3. Skill Gaps detection
4. Training centres by country
5. Potential University rankings

The technical solution for the portal as proposed by the UPM has been:

1. Technical platform based on Wordpress, as it is a CMS (Content Management System) of proven capacity and reliability. Wordpress is currently the basis of 25% of the world's websites, and even more so if it is a place where there is an edition and publication of content, in the form of articles or documents.
2. The Repository of courses currently in Tableau will be integrated into a Wordpress database using the MySQL database manager. Wordpress and MySQL are open-use tools, easily accessible and integrable with Apps and web applications.

The database has been designed and created. A first version available with all the metadata used in the Intermin Survey (WP1). It has countries, cities, institutions, programs, degrees, and the 9 Intermin training areas with its hierarchy of Skills.

A software tool is already created to load and synchronize the database from the Tableau excels (WP1). In addition to loading the data, it normalizes and cleans them, encodes the Skills, detects duplicate data and does some necessary cleaning. Performs all necessary conversion of columns from Tableau excel to tables and columns and relationships in the created database.

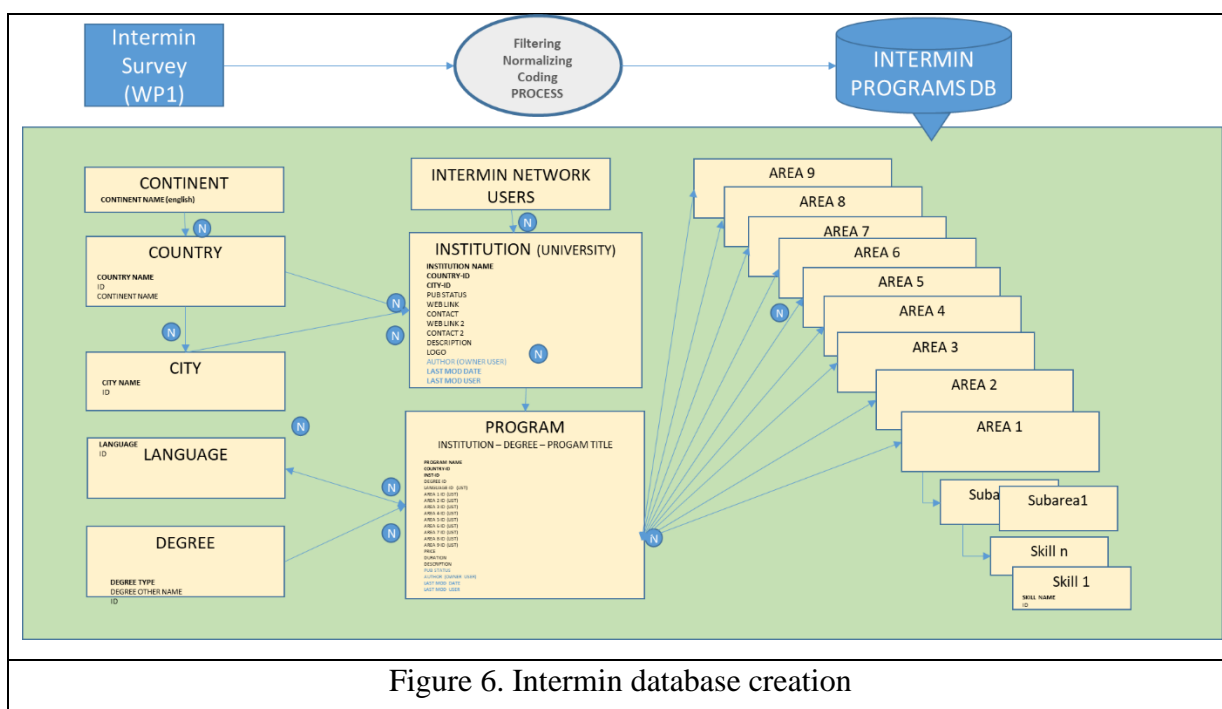
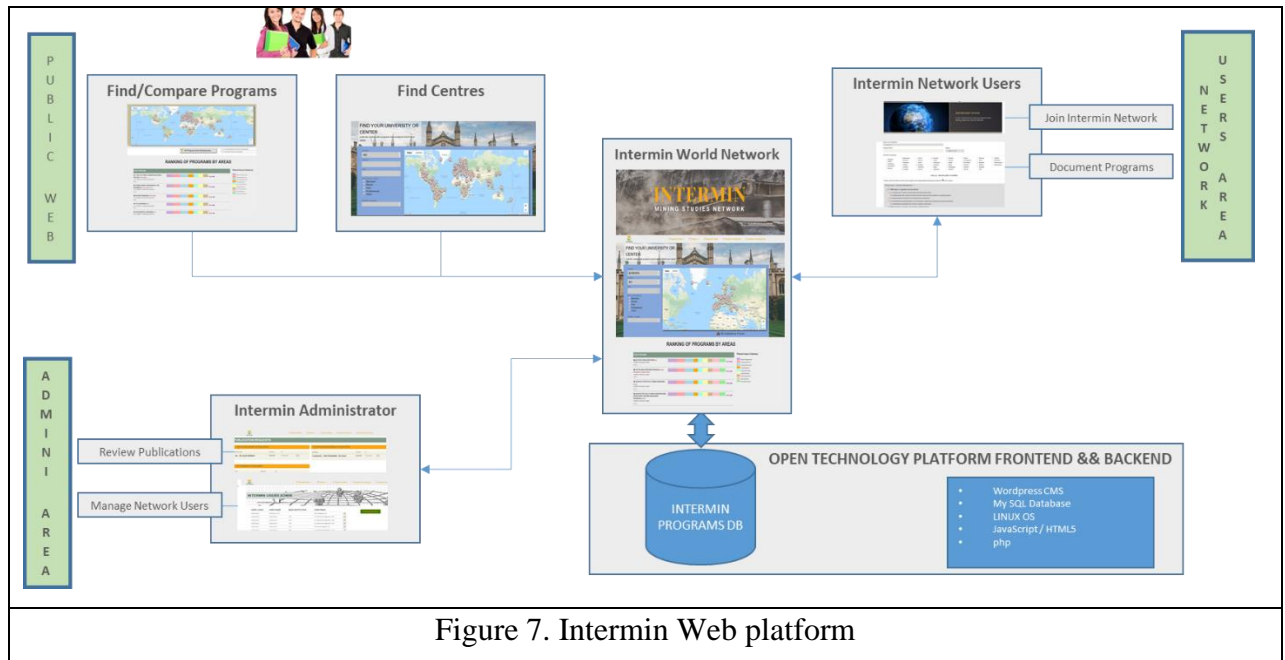


Figure 6. Intermin database creation

The solution proposed and which is currently in a draft mode is as follows:

1. A Private Network of Users on Wordpress has been created: users of the provider centres, and administrators.
 - a. The internal structure of the web application to connect and interrogate the database has been created.
 - b. Search engine for academic programs, accessible to the public, based on filters.
 - c. Queries and creation of records in the database, accessible only to identified Internet users.
2. There will be a Web Portal of public content, with the offer of Learning Programs from the Catalog, and tools for searching content and Training Centres visually.
3. There will be a private area in the Web Portal for the Private Network of Users, who can access to manage their own offer of training programs contained in the Catalog, including downloadable material.
4. Backend tool, on Wordpress, for the administration of the user network, Course Catalog and additional content of the website. Tool for backup and bulk loading of the Catalog to and from backup files in CSV (Excel) format.
5. The web created will be also fully functional on small screen devices, such as mobile phones and tablets.

6. An Analytic Module is configured: Integration with the Google Analytics analysis tool to obtain analytical reports about users, consultation visits, downloads of content made, visitors sent to schools' websites and other rankings and usage parameters , useful for the exploitation and evolution of the Web Portal.



In the last consortia meeting it was agreed that the hosting of the INTERMIN Portal will be in the EGS servers and that by mid-May the INTERMIN portal once transferred to the EGS servers will be opened to all Intermin members.

The portal will also be linked to a dedicated webpage (hyperlink) detailing university programmes (Bachelor and Master) offered by European Universities (GUIDE – beta version available on <https://www.geoscience-studies.org/>). The GUIDE portal will be maintained by the EFG and BDG after INTERMIN's funding period. The information provided by GUIDE includes detailed data on curricula of geoscientific BSc and MSc programs relevant for the primary and secondary raw materials sector in Europe.

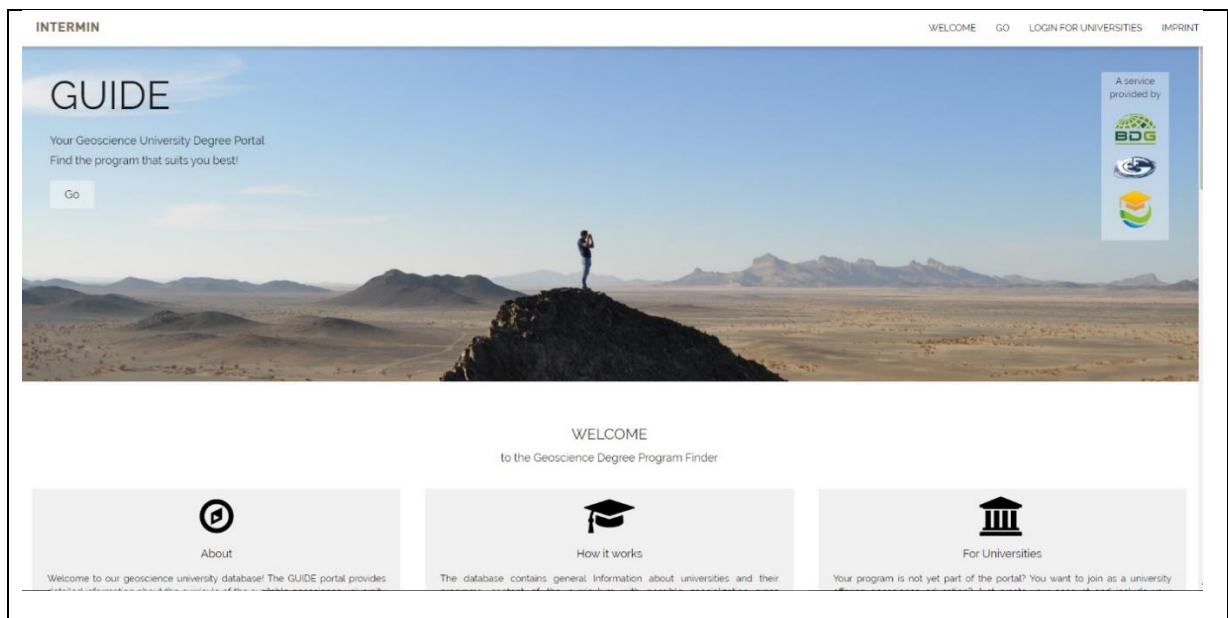


Figure 8. GUIDE web site

The Guide web site will integrate in the INTERMIN portal following the scheme included in Figure 9

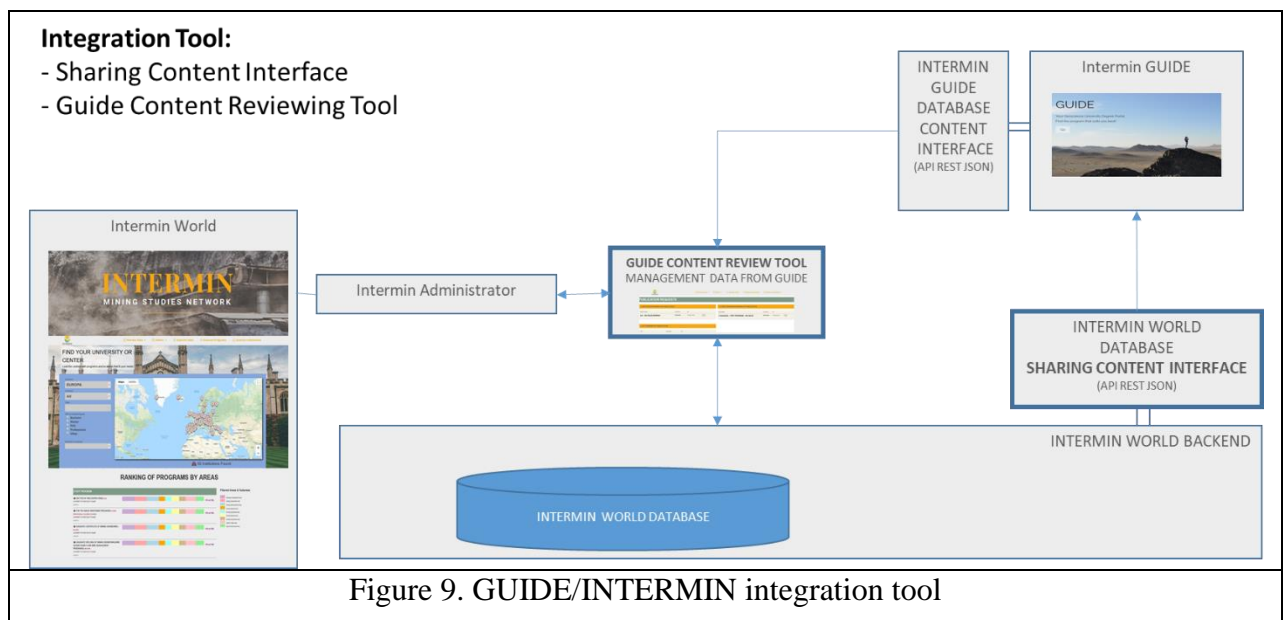


Figure 9. GUIDE/INTERMIN integration tool

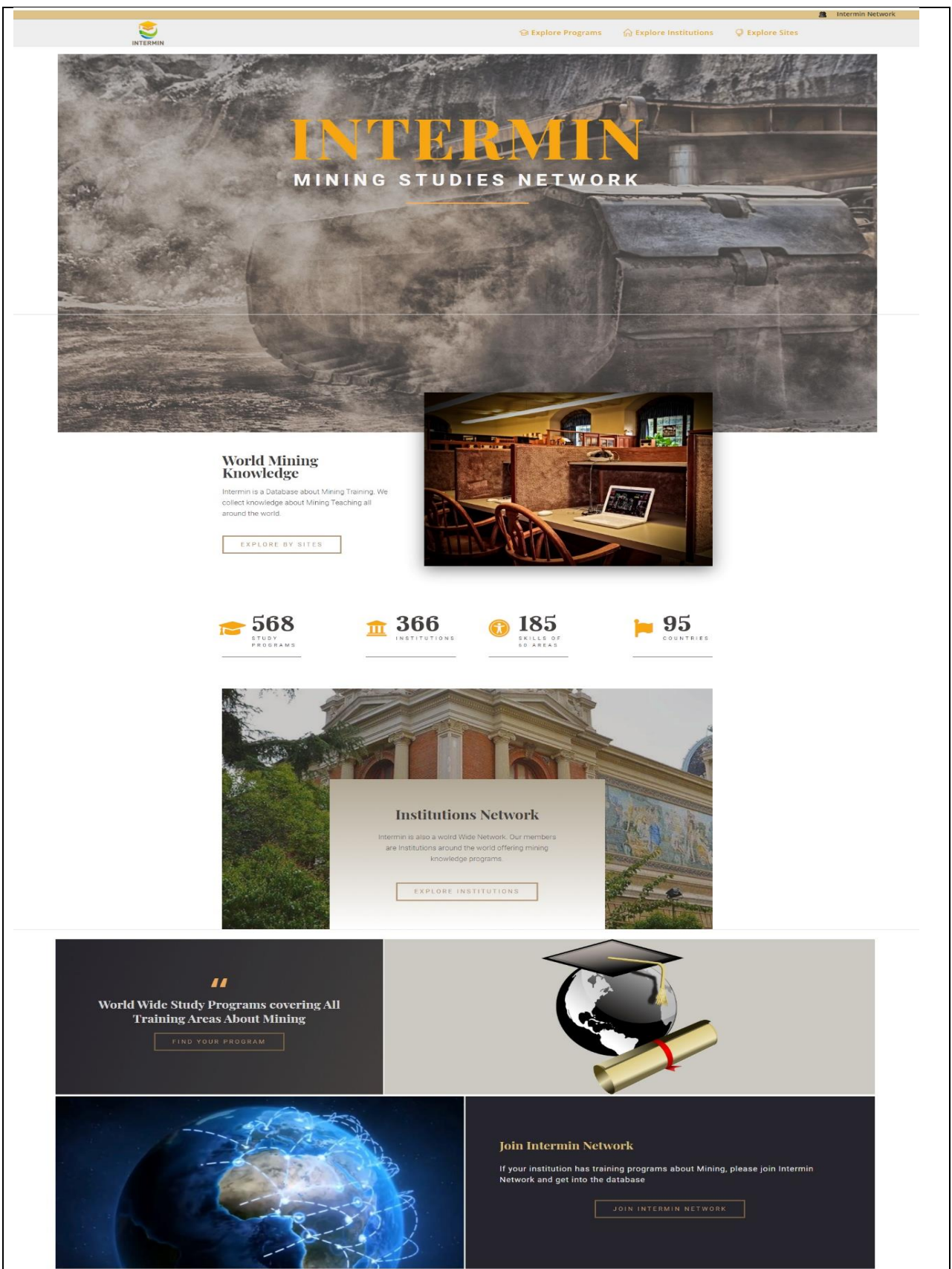


Figure 10. The new INTERMIN portal

- Task 4.2.2: Sustainability Plans

This task has not yet been implemented. It will elaborate on sustainability pathways that could be used to keep the international network operational after the EC funded period. The aim is to define a range of financing scenarios and then use the Intermin Project meeting at Month 24 to discuss these scenarios with members of the Advisory Board and to create a **Sustainability Plan** (D4.2) of the training network that will define:

- ✓ Scope and membership structure;
- ✓ Scope of cooperation strategies/agreements between partner training centres;
- ✓ Legal & financial base of cooperation;
- ✓ Design of the network structure and roadmap for implementation.

In the last consortium meeting it was proposed the possibility of participating in EIT RAW MATERIALS Booster calls for start-ups. This type of projects finances up to 60.000€ of a total of around 100.000 €/year for 2-3 years. The aim could be to:

1. Deliver a commercial grade service upgrade of the INTERMIN Platform;
2. Turn the INTERMIN Platform into a global service;
3. Add additional functionalities (for example head hunting and/or promoting employment of young graduates).

The outcomes of the project will include a commercial service, a detailed business plan and an SME that will be established at the end of the project.

As this needs a certain financial support from interested members, it was agreed that the EFG will draft a business plan proposal for the potential startup company before May 15, then members will define their financial compromises. Both the EFG and the UPM will coordinate the information of the business plan since the Deliverable 6.4 Sustainability Plan of the international Network it is the responsibility of the UPM, and the draft business plan could also be used in the deliverable.

2.5 WP5 – COMMUNICATION AND DISSEMINATION (EXPLOITATION)

INTERMIN has been active and present in various cluster events and meetings: The list of events are as follows,

INTERMIN was represented in the following Conferences/ Workshops between May 2019 and April 2020:

Events	Month & year	Place	Number of attendees
PDAC – Prospectors & Developers Association of Canada	March 2020	Toronto, Canada	23144
Geotechnical Solutions for Interregional Environmental Problems Portugal-Spain	November 2019	Covilha, Portugal	200
MinLand Project- Final Conference	November 2019	Brussels, Belgium	40
Raw Materials Week 2019	November 2019	Brussels, Belgium	700
INTERMIN international conference	October 2019	Ecuador, South America	200
Society of Mining Professors (SOMP)	July 2019	Bochum, Germany	110
ASOMM-IGF Workshop and Training towards Sustainable Mining Practices among ASEAN+3 Countries	July 2019	Bangkok, Thailand	50
China-ASEAN Mining Cooperation Forum and Exhibition: The 9th Liaison Officials Meeting	July 2019	Jakarta, Indonesia	35
The 61st Forum on the Geology of Industrial Minerals - Central Slovakia Neogene Volcanics 2019	May 2019	Banska Stiavnica, Slovak Republic	38
EIT Raw Materials Summit	May 2019	Berlin, Germany	200
Mineral Resources Expert Group Meeting	May 2019	Trondheim, Norway	30

ASGMI XXV General Assembly	April 2019	Tegucigalpa, Honduras	35
EGU – European Geosciences Union General Assembly 2019	April 2019	Vienna, Austria	16250
PDAC – Prospectors & Developers Association of Canada	March 2019	Toronto, Canada	25843
CCOP-DGM-DOM-ASOMM Workshop for ASEAN Mineral Resource Evaluation	March 2019	Vientiane, Lao PDR	60
16th ASOMM Working Group Meeting and 2019 IGF Workshop and Training Towards Sustainable Practices	March 2019	Chiangmai, Thailand	40
ASEAN-IGF Mining and Sustainability Forum- Sharing Good Practices and Addressing Gaps in ASEAN Raw Materials and Environment 2019	March 2019	Chiangmai, Thailand	40
	February 2019	Berlin, Germany	150

1) Green: Conference

2) Red: Workshop

3) Blue: Event

4) Violet: Organisation of workshop

Communication & Dissemination:

INTERMIN is active on social media platforms: Facebook, Twitter, LinkedIn, Flickr and YouTube. The social media platforms have been witnessing a constant rise in the activities and numbers of followers.

Here is a comparison on the number of followers during May 2019 and in April 2020:

Platform	May 2019	April 2020
LinkedIn	830+	2030+
Twitter	130+	217+
Facebook	60+	137+
Flickr	50 pictures	85 pictures
YouTube	Nil	54 views

All the produced communications materials were designed based on visual identity. Three brochures, a postcard, two posters and a video have been produced so far, the materials were distributed in all the meetings and were also published on the website and social media platforms.

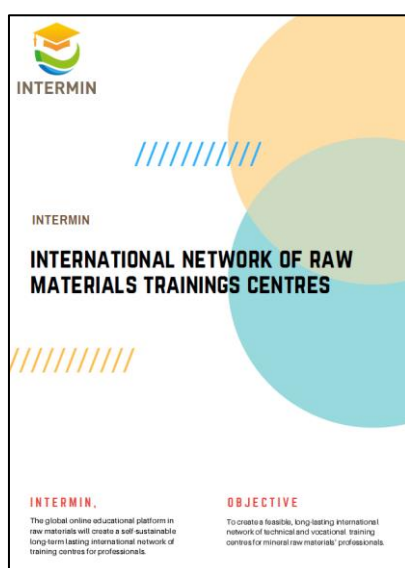


Figure 11: Brochure 1- Presents an overview of the project and its objectives.

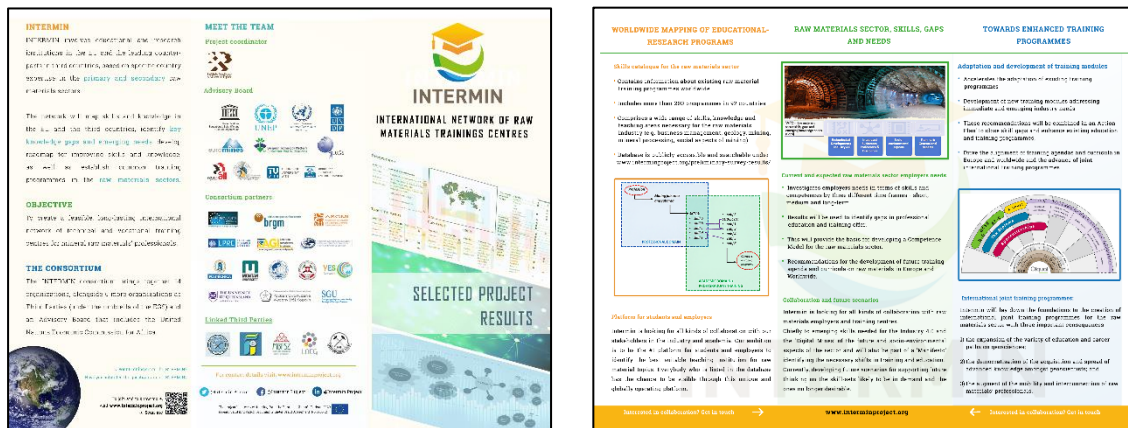


Figure 12: Brochure 2- Contains a general introduction to the project, meet the team and project results.



Figure 13: Brochure 3 – Contains the key achievements of WP1, WP2 and WP3. It also encompasses a general introduction to the project, meet the team and an overview of results. The brochure was made available in English and Spanish version.

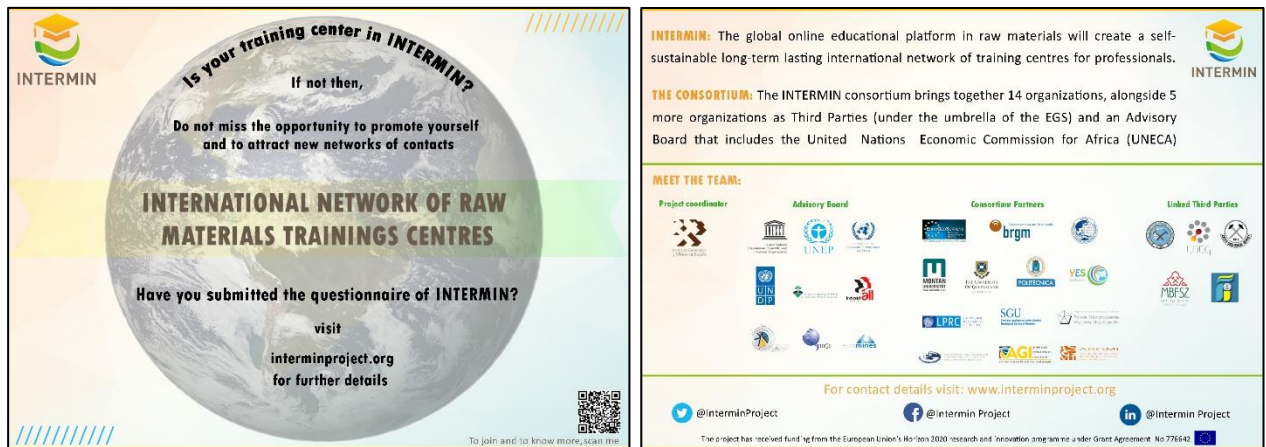


Figure 14: Postcard- presents the details of INTERMIN questionnaire and an overview of the project. The postcard was designed to involve more participants to submit the questionnaire.



Figure 15: Poster- The poster was presented at Raw Materials Week 2018, MIN-Guide EU and MIREU Conference

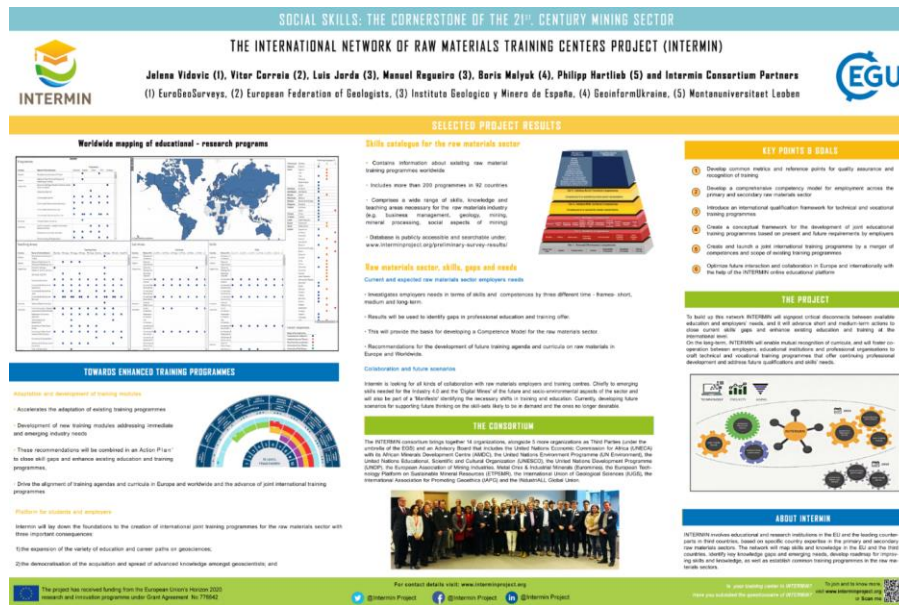


Figure 16: Poster- The poster was presented at European Geosciences Union 2019 held in Vienna, Austria.

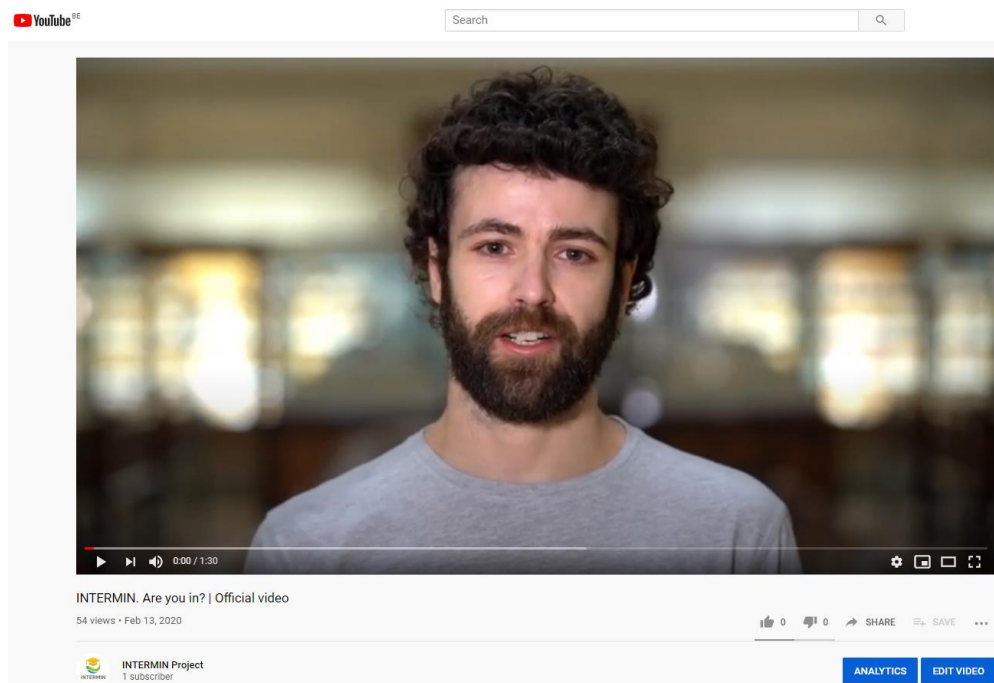


Figure 17: The official INTERMIN Project video.

The INTERMIN project prepared a comprehensive competency model for an international sectoral framework for the raw materials sector (SQF-RM) to improve relevance, transparency and coherence between qualifications minerals value chain and the corresponding international recognition.

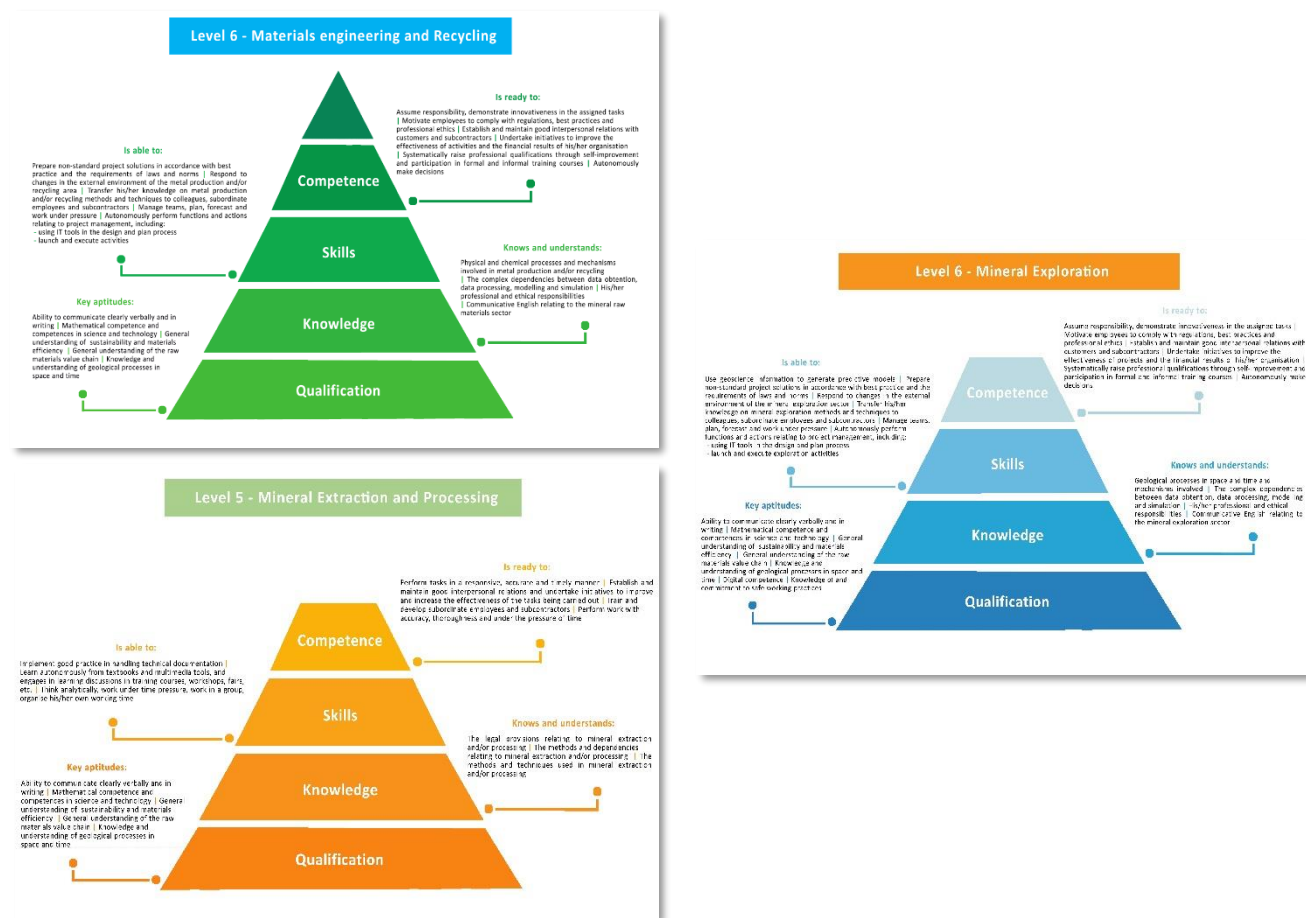


Figure 18: Example illustrations of the Raw Materials Qualification Framework.

Results achieved in the last 12 months:

- The INTERMIN team was very active during the PDAC, EGU, EIT Raw Materials Summit, EU Raw Materials Week, networking, poster sessions. The team was also searching for a collaborator for the database and skills catalogue questionnaire and training centres updating.
- The webpage has been improved and updated adding new possibilities:

- Library section – with appropriate documents related to the interests of INTERMIN audiences.
- News section – with updates provided by the partners and to the interest of the audiences. The news about INTERMIN International Conference in Ecuador was given particular emphasis through dedicated promotional activities in close collaboration with the ESPOL Polytechnical University (organizer of the event). Recently the news about INTERMIN's presence at PDAC 2020 was published.
- Presentations – relevant presentations are now made available for the general public under presentations section on the newsroom.
- Social media – dedicated social media posts with customized messages to the relevant target groups have increased the followers on the INTERMIN social media platforms. The official INTERMIN Project video was also circulated to the target groups and followers. Moreover, the video was made as the cover video on the social media page.

2.6 WP 6 PROJECT MANAGEMENT

- **Monthly conference**

The coordination of the project, partners and tasks have developed without relevant incidents, until the global pandemic of COVID-19 that start in China in Dec2019 that delayed normal activity of normal life around the world.

INTERMIN is not indifferent to this, and we have suffered delays, but the project has never stopped.

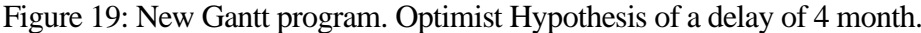
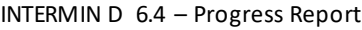
To cope with the COVID challenge, IGME has designed a new planning that includes a delay of the project of 4 to 6 months (to date is difficult to assess when the restrictions will end). IGME has drafted a new Gantt Chart with an optimist hypothesis of 4 months of delay, but as we do not yet know which will be the speed of the recovery to normality, we are ready to include a delay of 6 months.

IGME organizes a monthly coordinating conference call (using go-to-meeting platform) to track the actions and issues of each WP, as well as to compile ideas from the partners. Up to now 11 virtual conferences have been organized, some of them inviting the Advisory Board.

A third amendment is in preparation, but after the COVID 19, and the necessary include of 4-6 months delay in all activities. The text will be presented at the end of May 2020 (Month 31) to have a more realistic scenario of the reactivation plans in the different countries.

In the new schedule the meeting in Poland (2020) which was already scheduled to be moved from Warsaw to Cracow at suggestion of our EFG Polish third party, and was planned for the month 32, will be moved to month 36 (September 2020).

The meeting scheduled in Paris in month 34, was moved from Paris to La Palma (Spain) in month 38 (November 2020) after the resignation of the BRGM. The meeting will be organized by LPRC. But due to the COVID situation, the dates on which the meetings will take place might have changes.



With regards to presential meetings the more relevant action of organization and coordination in this last 12 months, was the meeting in Guayaquil.

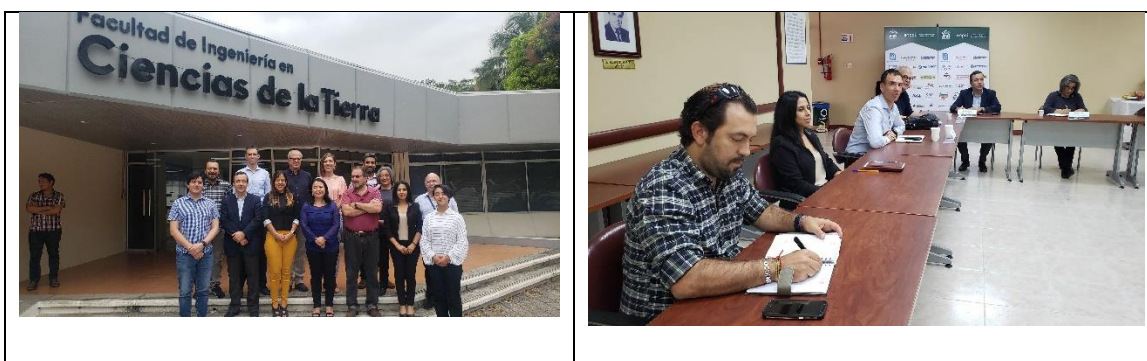
Guayaquil Meeting 2019. INTERMIN conference in Ecuador: development & outcomes

The INTERMIN conference in ECUADOR was held from Monday 21st to 29th October 2019 and consisted in a series of activities:

1. Reception to INTERMIN consortium by ESPOL authorities. Visit to the training facilities and laboratories of the Faculty of Engineering of Earth Sciences of the High Polytechnics School of the Litoral (ESPOL) (21th October)
2. Plenary conference in the premises of the ESPOL in Guayaquil (22th October)
3. Visit to the artisanal and small-scale dimensional stone mining sector. El Tablazo. Cantón Santa Elena (23th October)
4. Visit to oil exploitation region. Salinas. (23th October)
5. Visit to the artisanal and small-scale gold mining sector. Camilo Ponce Enríquez. Jerusalem mine and metallurgical processing plant (24th October)
6. Technical visits to aggregate quarries, waste facilities, underground water installations, geotechnical problems (lava tunnels in Bellavista) areas in the Municipality of Santa Cruz (Galapagos islands). (28-29th October).

1. Reception to INTERMIN consortium by ESPOL authorities. Visit to the training facilities and laboratories of the Faculty of Engineering of Earth Sciences of the High Polytechnics School of the Litoral (ESPOL)





Mrs Paola Leonor Romero Crespo, Dean of the Faculty of Engineering of Earth Sciences, welcomed the consortium members which thanked ESPOL for the reception and then discussed the program / schedule of the meeting. Then the Dean led the INTERMIN members through a visit of the facilities and laboratories of the Faculty where they could discuss with professors and students about earth sciences training in Ecuador.

Plenary Conference

Attended by more than 200 attendees (all of them received a certificate from INTERMIN and ESPOL), the conference was a complete success, both by the extraordinary organization by ESPOL and the very good selection of speakers.

Follows the agenda of the meeting with the names of the speakers and their contributions.

- Registration
- WELCOME
- Presentation by the Mines Vice-Minister
- Manuel Regueiro: INTERMIN, A global network of mining resources training centers.
- Vitor Correia: European policy on raw materials and its impact on education.
- LundinGold Conference. - Iliana Rodriguez: Education and training programme in Lundin Gold, Fruta del Norte Project.
- BREAK
- Philipp Hartlieb: An overview of the current situation in raw materials education worldwide.

- Adrienn Cseko, LPRC: Raw materials sector skills, gaps and needs
- Curimining Conferene. - José Gomez: Curipamba Project and the enviromental, social, and management.
- Damaris Fernandez: Educación y competencias desde la perspectiva académica, orientadas hacia la innovación y las materias primas
- Slavko Solar: INTERMIN communication and dissemination activities.
- AIME Conference. - René Ayala: Management of change in the Ecuadorian mining sector.
- LUNCH
- Slavko Solar: EuroGeoSurveys supporting a more sustainable Europe: the provider of EU mineral resources data.
- Gracia Olivenza: Association of Iberoamerican Geological and Mining Surveys. A network towards the socio-economic development of society.
- Small Mining Chamber Conference. - Oscar Loor: The role of the Mining Chambers, the integral development with the mining companies and the government.
- Jose Luis Parra y Alfaro: Mining Engineering Education in Spain. Development of an international mining education network.
- ESPOL Conference.- Rocío Estupiñán: Mining in Ecuador
- QUESTIONS AND PAUSE
- Roundtable debate: What is offering Academia and training centres and what skills is demanding the sector
- Closing remarks

During the conference all consortium members were interviewed by the ESPOL communication staff, local and national TV channels and radio broadcasters. Local press also published press releases about the project and the conference.

https://m.facebook.com/story.php?story_fbid=945224142502036&id=252741241750333&sfnsn=mo

<https://www.eluniverso.com/noticias/2019/10/22/nota/7570304/espola-acoge-conferencia-internacional-sobre-mineria>

https://m.facebook.com/story.php?story_fbid=945224142502036&id=252741241750333&sfnsn=mo

<https://www.facebook.com/RadioElite997/videos/1726632737468666/?sfnsn=mo&d=n&vh=e>

Plenary conference in the premises of the ESPOL in Guayaquil





2. Visit to the artisanal and small scale dimensional stone mining sector. El Tablazo. Cantón Santa Elena

Lead by the ESPOL staff, the INTERMIN members visited a small mine in the west costal area of Ecuador where a fossil beach lumaquel was exploited for construction material. The quarry was parceled and exploited by many individuals in a very peculiar way, with some services cooperatively exploited (trucks, loader, etc). Women were not working in the quarries but dis work in the cutting plant. We suggested to give a commercial name to the stone (Lumaquela or Santa Elena stone) to improve market sales, and the need of specialized training for this type of operations.



3. Visit to oil exploitation region. Salinas

Guided by Prof. , the group explored the geology and production areas of the first oil producing region of Ecuador now in recession.

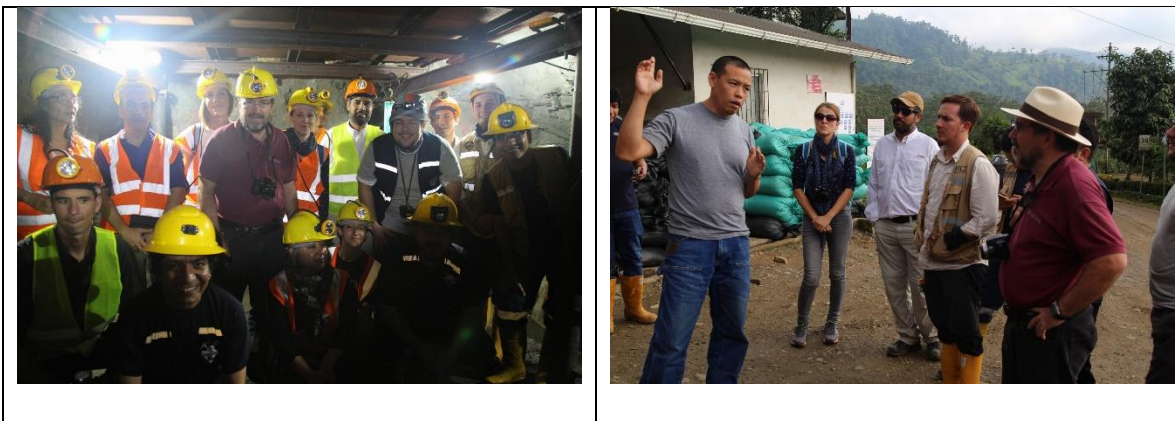


4. Visit to an artisanal and small-scale gold mine at Camilo Ponce Enríquez. Jerusalem mine and metallurgical processing plant

One of the most interesting visits was to a small-scale mining operation in Camilo Ponce Enriquez, where we visited the gold mine of "Jerusalem", an operation run by several engineers of ESPOL and with a staff of around 200. The mine was diligently operated with mineralized zones with over 10 g/t. In spite of this, the mine had no geology or exploration research done and the exploration technique was making new galleries and see then the richness obtained. We suggested to make exploration drilling to define well the deposit and be able to plan ahead the future galleries. The geology of the deposit was in hands of an external advisor that went to the mine when required but was not a regular task. The work by this female geologist was regarded by the workers as a crucial one and highlighted her role in progressing the mine development. Further follow-up to spot her leading role was suggested and the local independent news magazine arranged to interview her and convey more information to the INTERMIN project later on.

We also visited a metallurgical plant where the material from Jerusalem was treated in two lines: cyanide and flotation (for refractory ores). The resulting concentrate was exported. The final waste

of the process was being sold to China. The plant has just launched a new bioleaching plant which is the only existing in Ecuador. Mineral samples were provided to the INTERMIN team (head and flotation tailings) for further chemical and mineralogical analysis at the partners' labs. The purpose is to have a preliminary indication of further potential for the artisanal mines in the zone.



5. Technical visits to aggregate quarries, waste facilities, underground water installations, geotechnical problems (lava tunnels in Bellavista) areas in the Municipality of Santa Cruz (Galapagos islands)

The Municipality of Santa Cruz invited the team to visit and comment on the aggregate quarries they were operating, we also visited quarries exploited by private individuals. All operation were again smallholdings operations which were obviously very inefficient; and illegal from the National Park legislation point of view. Suggestions were made with regards to the needed training and to improve the quality and safety of the operations. The municipality is preparing a new regulation to request the National Park authorities the possibility of operating their own quarries inside the area that is outside the National Park (municipality land) and the consortia members were asked to review the regulation.

Another problem of the Municipality was the supply of fresh water, for this they had two wells. One near the coast affected by the tides and one which was visited but whose pump is around 120 m deep also affected (but less) by the tides, thus very salty. They're about to finish an inverse osmosis plant to desalinize the water. A hydrogeological study of the island is badly needed.

The problem of sinks in an area of the municipality due to the existence of lava tunnels was also studied by the team and proposals to study it were made.

The Municipality agreed on sending a list of needs to be studied by the consortium team and search potential financial support in Europe for the problems observed.



Outcomes

The presence of INTERMIN in Ecuador has been a complete success, both in terms of the project objective of spreading the news of its existence to attract new training centers to the future portal, as well as in exchange of knowledge and ideas with the participants in the conference (students, academia, industry, administration).

The field visits have also given the consortia the opportunity to get to know firsthand the reality of artisanal mining in Latin America and the existing training and gaps in this region. Building on these observations for future activities is highly recommended, because of the great potential and opportunities for development & cooperation.

Both sides of the educational chain have benefited one from the experience of the other and a long list of conclusions (on small scale mining training needs and gaps, marketing of stones, geological and drilling needs on gold exploration, environmental management, conflicts mining/environment, land-use management, hydrogeological problems, etc.) can be extracted that can be very useful for the INTERMIN portal, as well as a starting point for future activities and networks in Latin America.

Other coordinating issues

IGME submitted an amendment including the German Professional Association of Geoscientists BDG as EGS 3rd party.

Geoinform (third party of EGS) reported that due to internal national issues they had to leave the consortium (a situation that happened with other Ukraine's institutions). It was agreed that EGS will investigate the amount of work already done by this 3rd party and find if it is necessary to look for another partner or the expected work and budget has been accomplished. EGS will analyse the work made by Geoinform, to see if is necessary a reallocation of funds for other 3rd party or EGS itself. In the coming months it will be necessary to prepare an amendment for this reason.

BRGM informed the consortium during the last monthly meeting (11th meeting. 11/05/2019), that they will withdraw from the project due to internal problems, they are not going to continue after July 2019. BRGM will finish WP2 work on prospective scenarios with Futuribles by the end of July, and they will pass on this work to LPRC and close formally any activity at M18, hence synchronising their financial and technical report with the rest of the Consortium. This implies that BRGM will not be involved in any other tasks or other WP anymore. There was an internal

discussion about the need of a delay in the deliverables upload. There will be an internal analysis and feedback in middle June to see the progression and quality of work. If it is ok, the dates of deliverables will remain the same, but in case the work for the competency model and subtasks are not enough developed could the consortium will request a delay.

Therefore, it will be necessary to prepare an amendment, probably together with other matters such as the withdraw of Geoinform and BRG, and the allocation of resources to other partners if needed.