



Clustering with on-going initiatives

(EIT RM, Raw Materials Commitments, Clusters, EU projects, etc.)

D2.4 – Clustering with on-going initiatives

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Author	Patrick Wall, ETP SMR
Email	patrick.wall@eurogeosurveys.org
Reviewed by	
E-mail	
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Table of contents

1. Introduction.....	6
2. Clustering through VERAM.....	6
EIT RawMaterials	6
ERA-Nets	7
International outreach.....	7
3. Clustering events.....	8
Raw Materials Key EU Stakeholders Workshop at the Raw Materials Week 2016.....	8
International Cooperation on Raw Materials in the European Union Horizon 2020 Programme & Networking Session.....	9
Horizon 2020 RDI & CAS Project Cluster Conference.....	9
4. Conclusion	11

List of Acronyms

EIP RM	European Innovation Partnership on Raw Materials
EIT RM	European Institute of Innovation & Technology Knowledge & Innovation Community on Raw Materials
ERA-Net	European Research Area Network
ETP	European Technology Platform
EU	European Union
RM	Raw Materials
VERAM	Vision and Roadmap for European Raw Materials

1. Introduction

The objective of the clustering task within VERAM was to establish close contact and coordination of activities with other initiatives (such as the EIT RawMaterials) and EU & national projects, in order to avoid overlap and to capitalise on the synergies to support the development and achievement of the 2050 Vision and the Roadmap.

The VERAM consortium already brings together numerous specialised individuals and organisations from across the raw materials value chain, with the broad outreach of the European Technology Platforms and ERA-Nets involved. The project in itself is therefore a first effort in the clustering activities undertaken. However, the need was clearly to go beyond the actions of those directly involved in VERAM and reach out to the wider raw materials research and innovation community – initiatives such as the EIT RawMaterials (EIT RM) which encourages start-ups or regional projects that may involve partners with little experience at the broader European level.

It was initially envisaged that a specific workshop would be organised with the participation of these actors to exchange information and encourage collaboration. However, given that a number of VERAM partners and close collaborators were already engaged in such clustering actions themselves, it was instead found to be more efficient to join efforts and participate in the various clustering events that were planned to take place over the duration of the project, in some cases also assisting directly in the organisation. Apart from individual and more targeted stakeholder interactions carried out by VERAM partners at a number of events, three specific clustering events were attended over the course of the project, at which the VERAM objectives and progress were presented and the participants were encouraged to engage in the stakeholder workshops and consultations.

2. Clustering through VERAM

Close relations were built through the VERAM project with a number of relevant initiatives as well as specific projects with a keen interest in the VERAM outcomes in order to avoid overlapping and to capitalise on synergies to support the achievement of the 2050 Vision and Roadmap.

EIT RawMaterials

Well established contacts were used to interact with the excellence cluster for European academia, research and industry, the EIT RawMaterials (EIT RM) for the exchange of ideas on the current situation and future research needs in the raw materials sector. The EIT RM was kept regularly informed on the project progress, attending the two VERAM workshops arranged during the project, as well as being present as a high-level panellist at the VERAM Final Conference (represented by Pier Luigi Franceschini, Innovation Hub CLC South General Manager). This network plays a key

role in supporting innovations by speeding up and facilitating industrial exploitation of research results – a key objective of the project. A significant number of members of the various European Technology Platforms involved in VERAM are also actively engaged in EIT RawMaterials initiative, which has helped provide a strong link between the two and avoid overlaps with projects being developed at the EIT RM co-location centres across Europe. For example, the ETP SMR regularly invites the EIP RM executives to attend their General Meetings in order to exchange information on ongoing projects, discuss research and innovation priorities in the mineral resources sector and possibilities for future collaboration.

ERA-Nets

The two major ERA-Nets of relevance to VERAM were integrated into the project from the very beginning, with the ERA-MIN network being represented in the consortium by CNRS, with close interaction also from FZ Jülich and the ETP SMR, and the WoodWisdom-Net+ network represented by FNR, with close interaction from FTP. VERAM is an official member of the Advisory Board of ERA-MIN 2 through the ETP SMR, which ensured synergies with the 21 national and regional research programming agencies involved from 12 EU countries and 5 non-EU countries (Argentina, Brazil, Chile, South Africa, Turkey). In addition, the VERAM consortium partner FZ Jülich is directly involved as a partner in the ERA-MIN 2 consortium, whilst FNR is a partner in the WoodWisdom-Net+ consortium, which brings together 30 national and regional research programming agencies from 12 EU countries and 6 non-EU countries (Argentina, Egypt, Norway, Switzerland, Tunisia, Turkey). This was an extremely beneficial relationship on both sides, allowing the VERAM project to tap into the vast research network involved in the ERA-Nets when seeking feedback in the project's stakeholder consultations and providing a very good basis to obtain insights on the current situation of public research programmes in the raw materials sector, while also allowing the ERA-Nets to benefit from the obtained insights on future challenges and research and innovation priorities in the raw materials sector and corresponding needs of EU industries. The ERA-Net participants and research programming agencies represent a key target group that can implement research programmes on the basis of the VERAM Roadmap recommendations.

International outreach

Apart from the international partners involved in the two ERA-Nets, close ties were also forged with the international raw materials networks through ETP SMR seats on the FORAM project Advisory Board (Towards a World Forum on Raw Materials) and the more recently launched INTERMIN project Advisory Board (International network of raw materials training centres). This allowed for international outreach and perspectives to be gathered on what is a truly global industry.

3. Clustering events

Raw Materials Key EU Stakeholders Workshop at the Raw Materials Week 2016

The first major clustering event that VERAM took part in was the “Raw Materials Key EU Stakeholders Workshop” which was organised by EuroGeoSurveys with assistance from the ETP SMR, taking place on the 30th November 2016 during the Raw Materials Week 2016. The workshop aimed to bring together the major organisations, networks, ongoing initiatives and projects, in order to build and maintain ties between the numerous activities, to increase coordination of actions and limit possibility of duplications. Participants shared information about their activities and learned from each other in an open forum, allowing those present to discover where synergies could be exploited between projects and where cooperation or better coordination might be useful in future actions.

The workshop brought together representatives from the following organisations, projects and initiatives:

Programme/Project	Organisation/Institution
CHPM2030	University of Miskolc, Hungary
EGDI / MICA	Geological Survey of Denmark & Greenland
EGS Mineral Resources Expert Group	EuroGeoSurveys / LNEG - Portugal
EGU Outreach Committee	European Geosciences Union
EIP on Raw Materials	European Commission DG GROW
EIT RawMaterials	EIT RawMaterials
ERA-MIN 2	Geological Survey of Ireland
EURARE	National Technical University of Athens
FORAM	World Resources Forum
GeoERA	TNO - Geological Survey of the Netherlands
Horizon2020	Executive Agency for Small and Medium-sized Enterprises
MINATURA2020	MinPol
Minerals4EU	EuroGeoSurveys
MIN-GUIDE	Instituto Geológico y Minero de España

REE4EU	SINTEF Materials & Chemistry
UEPG	European Aggregates Association
VERAM	ETP SMR

International Cooperation on Raw Materials in the European Union Horizon 2020 Programme & Networking Session

The World Resources Forum 2017 event was held in Geneva, with an international audience of over 400 participants to discuss the latest issues surrounding global resources. As part of the programme, the workshop “International Cooperation on Raw Materials in the European Union Horizon 2020 Programme & Networking Session” was organised by the FORAM project. This workshop brought together 13 raw materials projects that were all working on issues related to the EIP on Raw Materials Strategic Implementation Plan (EIP SIP), to discuss cross-cutting issues including: identifying the key stakeholders along the raw materials value chain and how to involve them into dialogue; working together to improve data collection, transparency and access; making a stronger, more coordinated case to the policy makers; and reaching out to the public and improving their understanding of the raw material sector.

Alongside VERAM, representatives from four H2020 projects covering subjects of the EIP SIP International Cooperation Pillar (FORAM, MinFuture, INTRAW and STRADE) and eight projects covering the Non-Technology Pillar were present (MICA, MIN-GUIDE, MINATURA 2020, ProSUM, SCREEN, MSP-REFRAM, SMART GROUND, IMPACTPapeRec). The workshop allowed each project to present their main objectives and achievements before entering into a discussion forum on the major cross-cutting issues identified. By sharing experiences across a range of different projects, we were able to increase our understanding of the current trends and focus areas in European raw materials research and innovation and explore synergies to improve each other’s outcomes. The main target that the FORAM project intended to bring forward from the workshop related to advancing their ideas for enhanced international cooperation on all aspects of the raw materials value chain.

Horizon 2020 RDI & CAS Project Cluster Conference

The “Horizon 2020 RDI & CAS Project Cluster Conference” hosted by the FAME project in Brussels, 19 April 2018, included presentations from eight raw materials projects, both EU and nationally funded, informative elements from national funding agencies, policy aspects from European representative (DG GROW and EASME) and industry on measures to maximise the impact of research and innovation investment and promote business development. The VERAM project was presented in a key note address from the ETP SMR.

The main aim of the event was to increase exploitation of research and innovation results by merging different stakeholder groups and grant programmes from EU, national and regional levels. With a variety of topics reviewed in the presentations and keeping it in the context of current EU policies in raw materials, the participants discussed best practice in clustering to enhance exploitation and increase impact, looking for a more synergistic approach between the Member State initiatives.

Presentations were made by the following:

- Raw Materials policy aspects – Manuel Gomez Herero – Policy Officer C.2 DG GROW
- Industrial impact of H2020 Raw Materials projects – Marcin Sadowski – Head of Sector B2.4 EASME
- FAME – Flexible And Mobile Economic processing technologies – Dr Chris Broadbent, Wardell Armstrong International, UK
- INTMET – Integrated innovative metallurgical system to benefit efficiently polymetallic, complex and low grade ores and concentrates – Dr Carlos Frias, Cobre Las Cruces, Spain
- METGROW+ – Metal Recovery from Low Grade Ores and Wastes Plus – Dr Daneel Geysen, Group Machiels
- SLIM – Sustainable Low Impact Mining solution for exploitation of small mineral deposits based on advanced rock blasting and environmental technologies – Celso Amor, Minera de Orgiva, Spain
- VERAM Strategic Research and Innovation Roadmap – demands from industry in the minerals sector for the EU Industry Strategy – Patrick Wall, European Technology Platform of Sustainable Mineral Resources (ETP SMR) & VERAM Project
- FAME (HORIZON 2020) – AFK (German BMBF) liaison for setting up a pilot plant to process low grade ore to achieve a marketable tin concentrate for local smelters – Dr Marco Roscher SAXORE Bergbau GmbH, Freiberg
- MIREU Network of Mining and Metallurgy Regions in EU (HORIZON 2020) & REMIX Smart and Green Mining Regions (INTERREG EUROPE) – Prof Dr Maria Taxiarchou, School of Mining and Metallurgical Engineering, NTUA, Athens
- National Academy of Finland funding to maximize impact in exploitation at national level – Arja Kallio, Director, Academy of Finland
- Junta de Andalucia – Add on measures to promote mining business and investment in the Iberian Pyrite Belt area – Miguel Ángel Román Ortiz, Subdirector General, D.G Industria, Energía y Minas, Andalucia
- STRADE Strategic Dialogue on Sustainable Raw Materials for Europe – Dr Doris Schüler, Oeko-Institut e.V. – Institute for Applied Ecology, Germany

Participants agreed that in order to maximize the impact of European and nationally funded raw materials projects, it is imperative that synergies are augmented between the projects. With the FAME Project Manager, Dr. Wolfgang Reimer (GKZ), also representing GKZ as member of the EPT SMR, close ties will remain between the FAME clustering activities and the VERAM project and its roadmap recommendations.

4. Conclusion

Clustering activities have proven extremely beneficial throughout the VERAM project in terms of expanding the knowledge and understanding of ongoing activities, current trends and boosting cooperation in finding synergies across the raw materials research and innovation community. These activities all contributed significantly towards the gap analysis and the development of the VERAM Vision and Roadmap.

The overarching objective of the task was achieved by finding synergies across the raw material sectors and value chains and developing proposals for common activities and research and innovation actions that provided input and ideas for the Roadmap development. The outreach of the project was considerably amplified and encouraged wider engagement of the stakeholders in the VERAM consultations and workshop.

At the same time, in reaching out and interacting with different projects, groups and sectors within the raw materials community, it is hoped that broader cooperation will be boosted in future undertakings, in particular those identified as priorities for the sector within the VERAM Roadmap recommendations.

The clustering activities engaged in by the consortium partners will certainly not cease with the end of the VERAM project and intentions have already been stated within the ETPs involved in VERAM – ETP SMR, FTP, EuMaT, ECTP and SusChem – to continue to work more closely together and keep regular exchanges in future endeavours. It is important to keep these ties built throughout the project alive. Collaboration on cross-sectoral issues and developing joint activities will be crucial to help overcome the challenges faced within the raw materials sector, both present and future.