

ERA-MIN3 – Raw Materials for the sustainable development and the circular economy



Dina Carrilho, Senior Science Officer, FCT, Portugal
*Swedish Mining Research and Innovation Day 2023 -
Enabling Innovation for a sustainable future - Lulea, 9 May, 2023*



Co-funded by the Horizon 2020
programme of the European Union



Content

01 ERA-MIN3 consortium and objectives

**02 Implementation of Joint Transnational
Calls and additional strategic activities**

03 ERA-MIN Dashboard of funded projects

**04 ERA-MIN contribution to EU Raw Materials
policies and strategies**



ERA-MIN3 – Raw Materials for the sustainable development and the circular economy

01

ERA-MIN3 consortium and objectives



Co-funded by the Horizon 2020
programme of the European Union

Consortium

15

EU Member States
countries

- Bulgaria
- Czech Republic
- Estonia
- Finland
- France
- Germany
- Ireland
- Italy
- Poland
- Portugal
- Romania
- Slovakia
- Slovenia
- Spain
- Sweden

3

EU Member States
regions

- Belgium-Flanders
- Belgium-Wallonia
- Spain-Navarra

1

EU Associated
Country

- Turkey

NEW countries: Québec province/Canada, Bulgaria, Czech Republic, Estonia, Slovakia, Wallonia region and Navarra region



3

non-EU countries

- Brazil
- Canada-Québec
- South Africa

ERA-MIN3

Objectives

Pan-European,
Innovative and
Flexible Network
of Public
Research and
Innovation
Funding
Organisations

01 Promote **world-wide** research and innovation (R&I) cooperation through **coordination of research and innovation funding programmes**

02 Strengthen the **non-food, non-fuel mineral raw materials community** by contributing to secure the sustainable and responsible supply towards a **green** and a **digital transition** under a **circular economy**

03 Implement **Joint Calls for transnational R&I projects** on **needs-driven research** on primary and secondary resources of **metallic, construction materials and industrial minerals** and other activities

04 Reduce the fragmentation of R&I funding on “*Raw materials for the sustainable development and the circular economy*” across Europe and globally

05 Support international R&I projects between **universities, research institutes, small, medium and large enterprises**, NGOs, public authorities, other



ERA-MIN3

RAW MATERIALS FOR THE SUSTAINABLE DEVELOPMENT
AND THE CIRCULAR ECONOMY



ERA-MIN3 – Raw Materials for the sustainable development and the circular economy

02

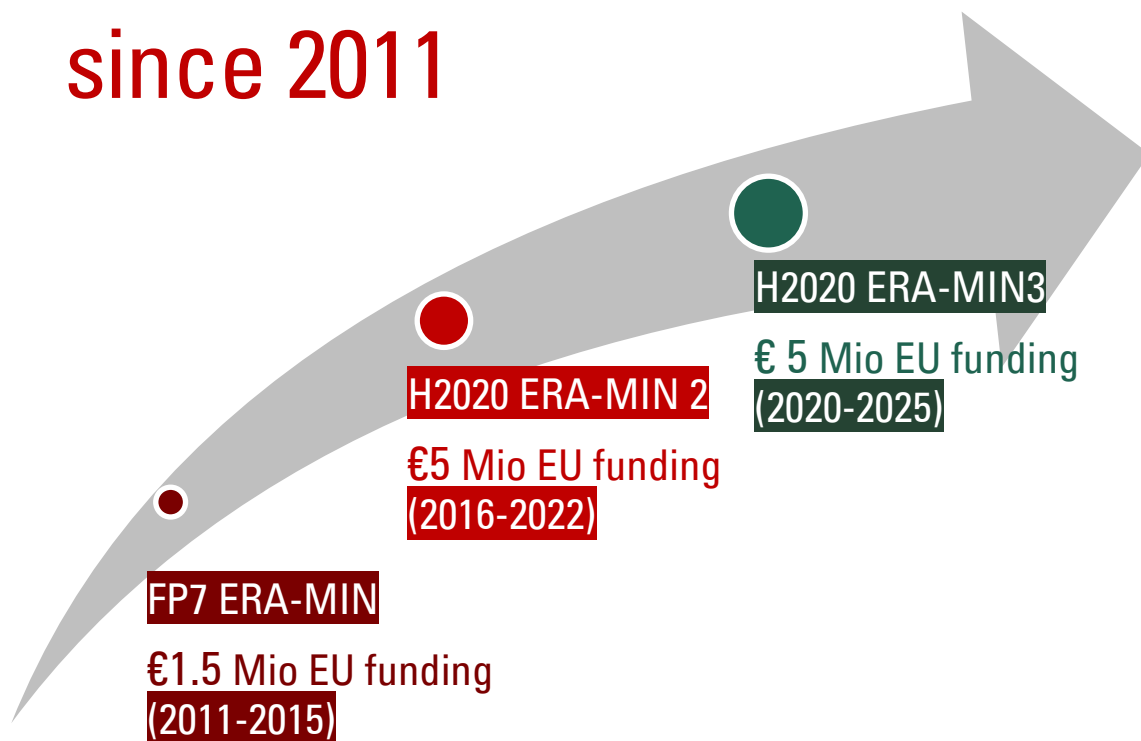
Implementation of joint transnational calls
and additional strategic activities



Co-funded by the Horizon 2020
programme of the European Union

3 Pan-European Networks of Public Research Funding Organisations

since 2011



✓ **8** Joint Calls for transnational R&I projects on
**non-fuel, non-food industrial, construction and
metallic minerals**



>**79** R&I transnational projects (total)

30% enterprises (average)

>**€60 Million** total public funding

>**€83 Million** total project costs



Co-funded by the Horizon 2020
programme of the European Union

**13 Battery related projects (€12 million) from
ERA-MIN Calls (2015, 2017, 2018, 2019, 2021)**

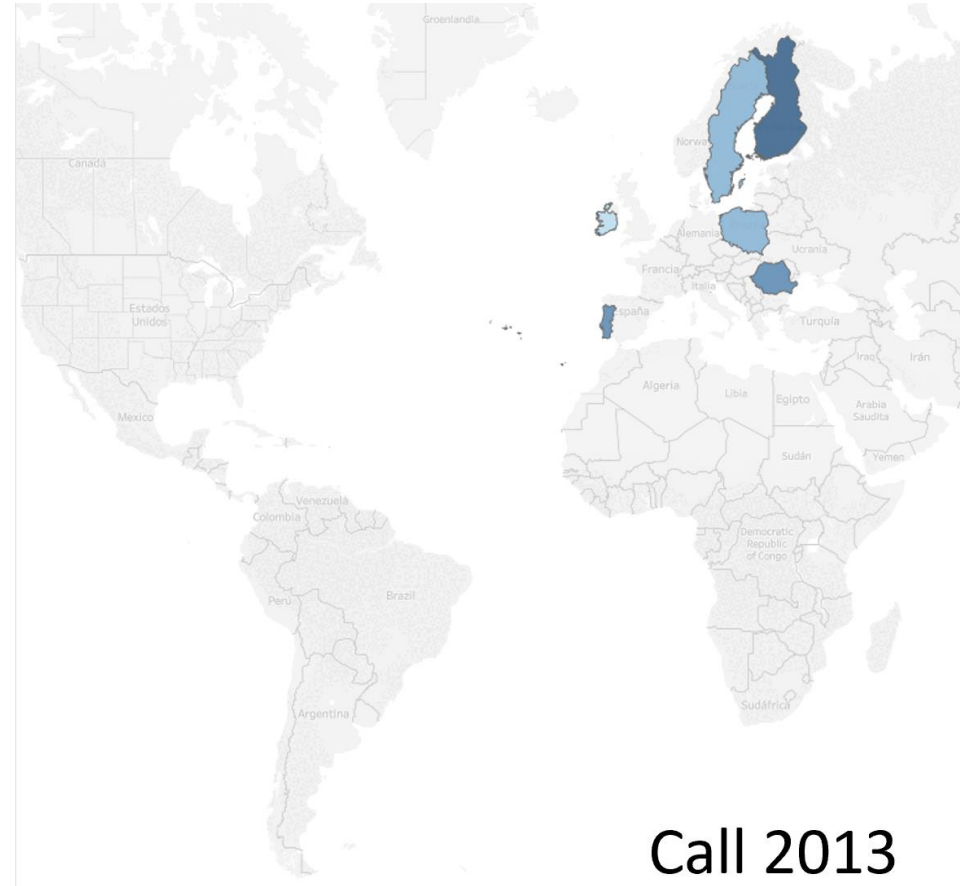
ERA-MIN3 Dashboard

Country participation in ERA-MIN calls



RAW MATERIALS FOR THE SUSTAINABLE DEVELOPMENT
AND THE CIRCULAR ECONOMY

Third-country participation,
supporting EU dialogues on raw
materials (LAC, AFRICA and
CANADA) – 4M€



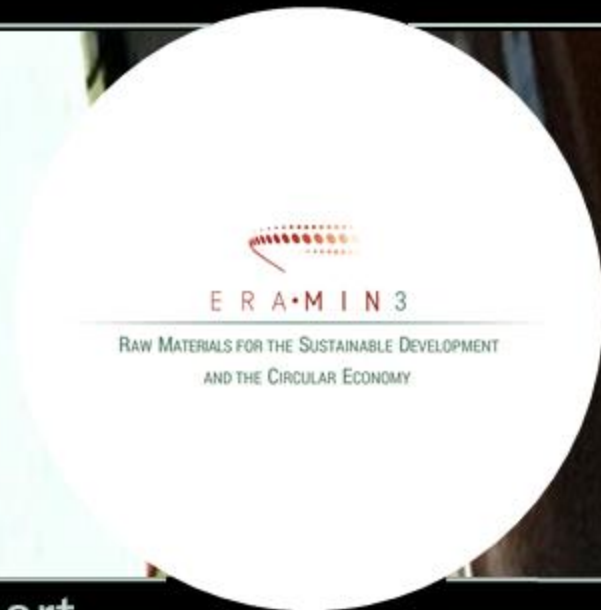
Call 2013



Co-funded by the Horizon 2020
programme of the European Union

Raw Materials for the Sustainable Development
and the Circular Economy

ERA-MIN 10th Anniversary Full Paper Published



"ERA-MIN: A Decade since the Inception of the EU Led Effort to Support the International Raw Materials Research Community" is an Open Access Proceeding Paper published on 28th January 2022 on the journal Material Proceedings



Co-funded by the Horizon 2020
programme of the European Union

Benefits

Testimonials from Project coordinators



Pesquisar



MENT



ERA-MIN Project Testimonials

ERA-MIN3
28 vídeos 1.163 visualizações Última atualização e...

≡+


➦

⋮


▶ Reproduzir ...

↻ Ordem alea...


- 3




Project Sb-RECMEMTEC
ERA-MIN3 • 103 visualizações • há 1 ano
6:15
- 4




Project MiCCuR
ERA-MIN3 • 94 visualizações • há 1 ano
2:45
- 5



Project MIWACUT
ERA-MIN3 • 75 visualizações • há 1 ano
2:00
- 6



Project MOSTMEG
ERA-MIN3 • 116 visualizações • há 1 ano
3:20
- 7

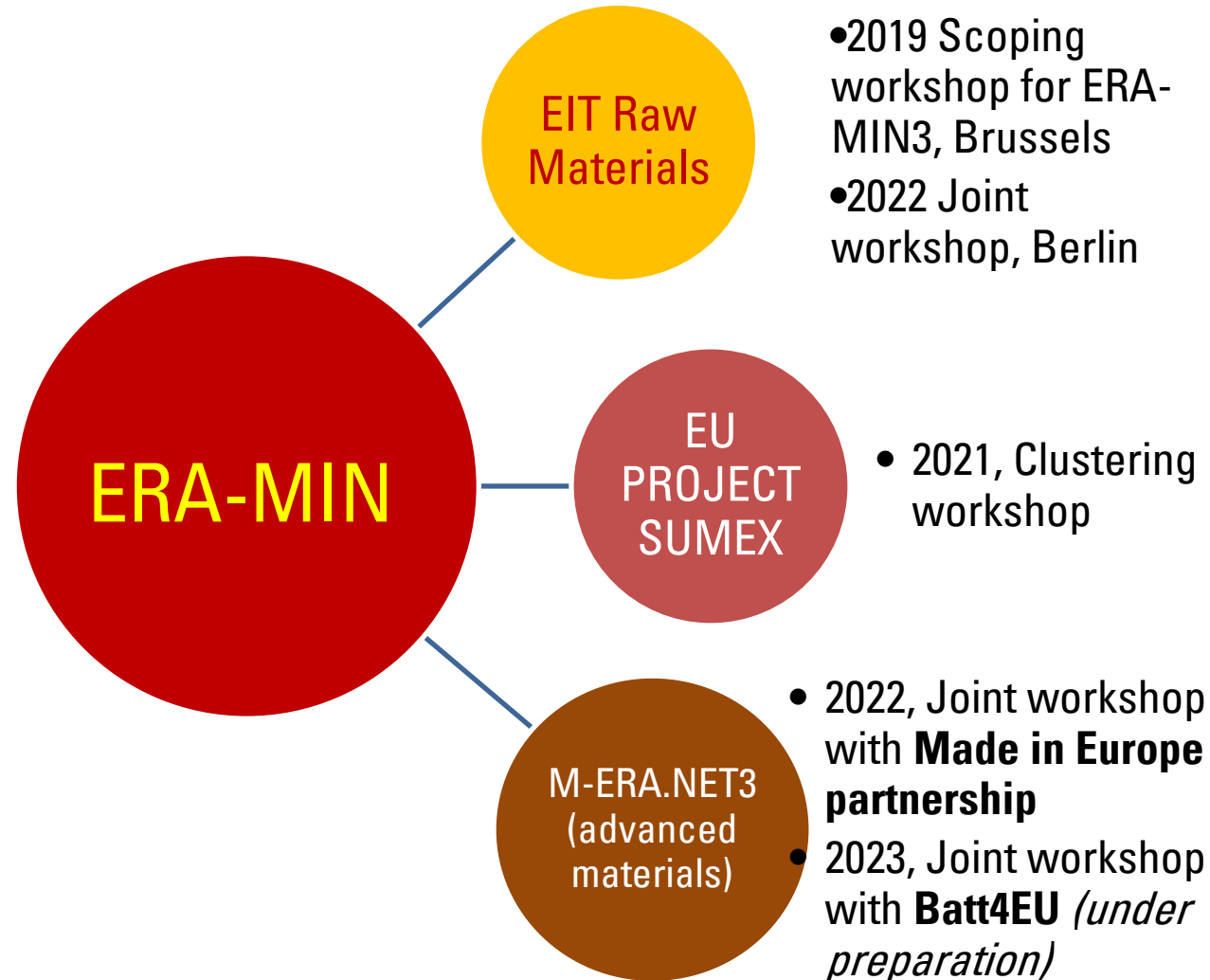


Project GEOSULF
ERA-MIN3 • 52 visualizações • há 1 ano
2:35



Co-funded by the Horizon 2020
programme of the European Union

Additional Strategic partnerships



ERA-MIN3 – Raw Materials for the sustainable development and the circular economy

03

ERA-MIN Dashboard of funded projects



Co-funded by the Horizon 2020
programme of the European Union

ERA-MIN Joint Calls Dashboard

Transnational R&I projects (2013-2021)



ERA-MIN 3

RAW MATERIALS FOR THE SUSTAINABLE DEVELOPMENT
AND THE CIRCULAR ECONOMY

Number of projects by category

Others (Design, public
policy and circularity)

6

Primary resources
supply

23

Substitution of critical
materials

3

Secondary resources supply
(Recycling)

47

1

21



Co-funded by the Horizon 2020
programme of the European Union

- **Small consortia (4 to 11 partners)**
- **Usually 3 to 5 countries**
- **€0.5 to €1.5 Mio requested funding**
- **80% academia-industry projects**
- **TRL 1-8 (mostly earlier TRLs)**
- **24-36 months project duration**

Keyword map of 79 collaborative R&I projects



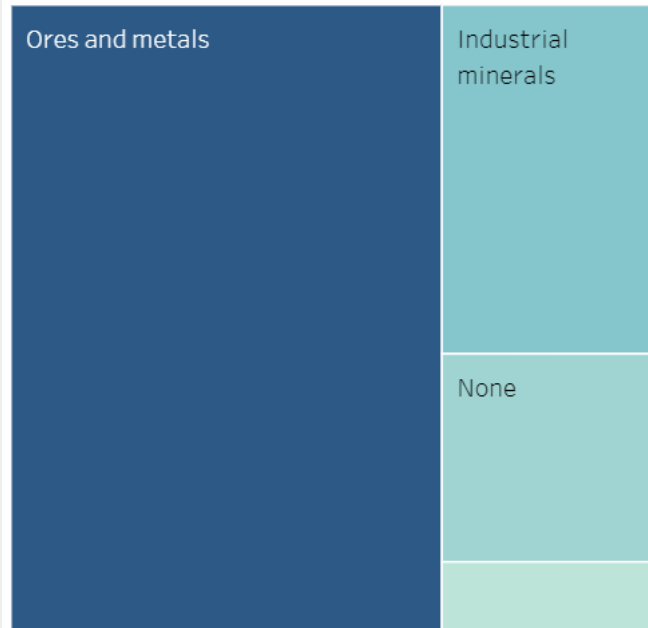
ERA-MIN3

Dashboard

Funded projects since 2013 - COUNTRY Sweden



Mineral Category



Nº of projects co-funded

27

Total funds (€)

7.252.953

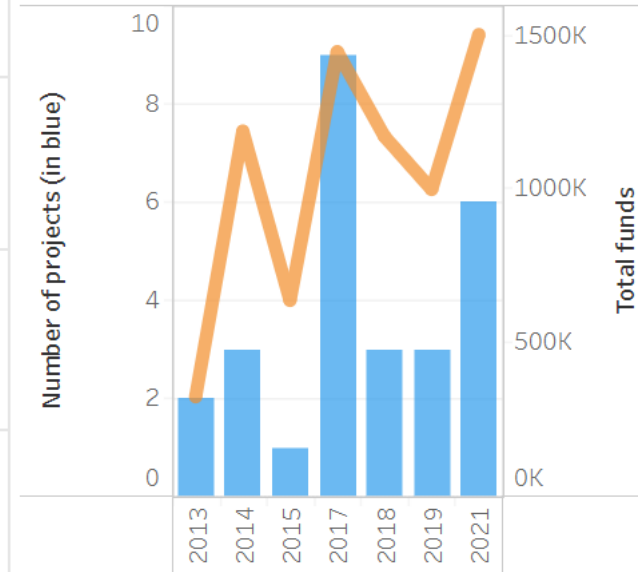
Total costs of projects (€)

9.160.617

Average total funding per project (€)

268.628

Evolution of project funded



Co-funded by the Horizon 2020
programme of the European Union

Raw Materials for the Sustainable Development
and the Circular Economy

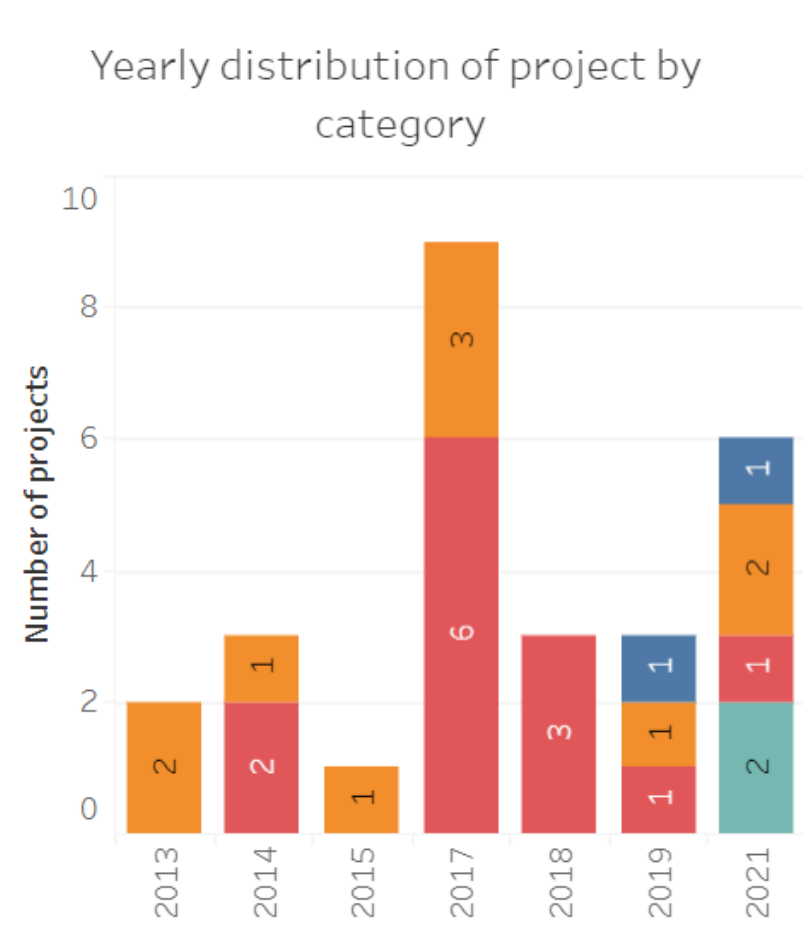
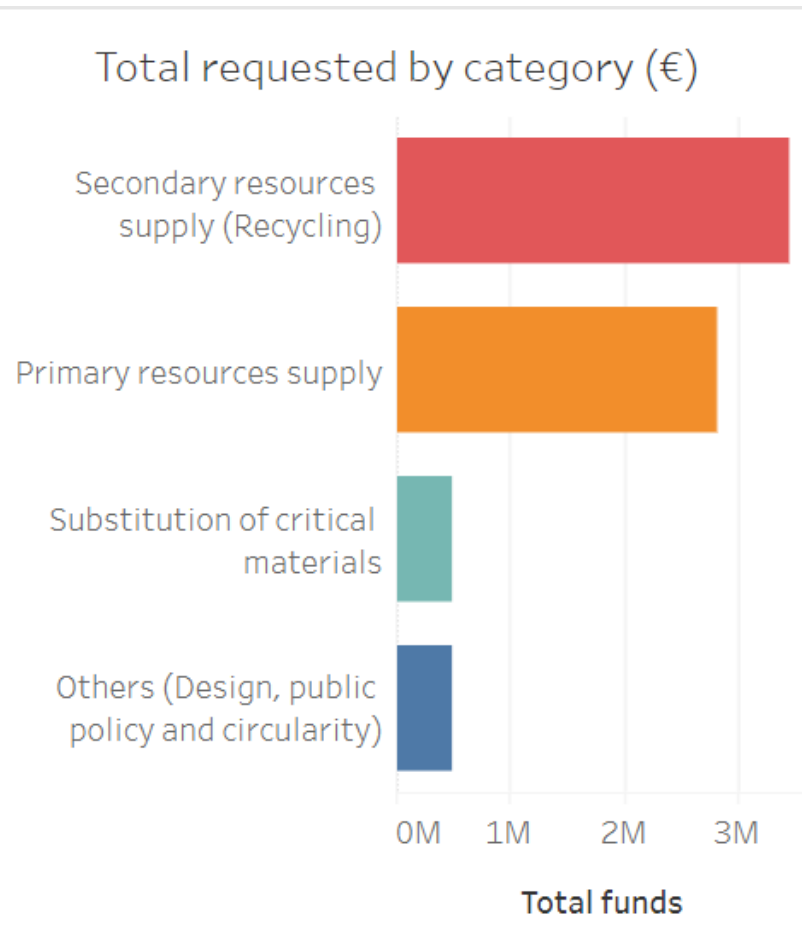
ERA-MIN3 Dashboard

Raw Materials for the Sustainable Development and the Circular Economy- COUNTRY Sweden



ERA-MIN3

RAW MATERIALS FOR THE SUSTAINABLE DEVELOPMENT
AND THE CIRCULAR ECONOMY



Co-funded by the Horizon 2020
programme of the European Union

Raw Materials for the Sustainable Development
and the Circular Economy

ERA-MIN3

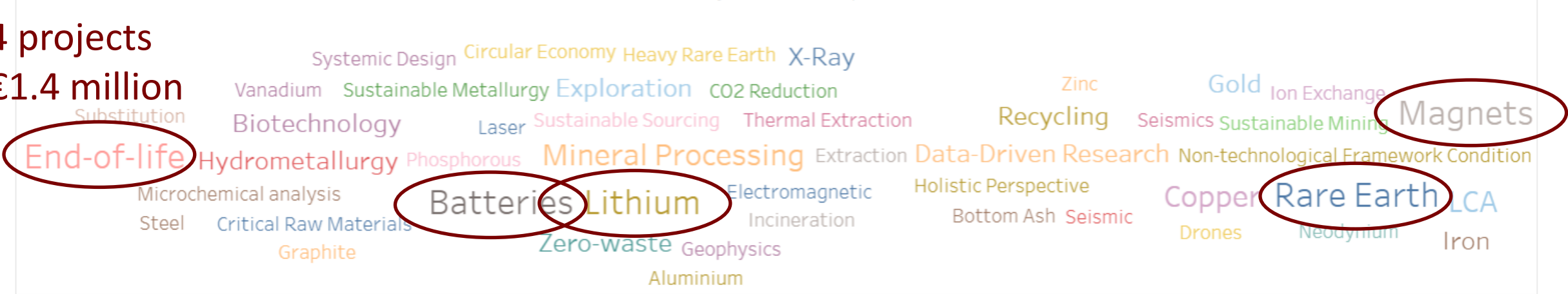
Dashboard

Raw Materials for the Sustainable Development and the Circular Economy- COUNTRY Sweden



4 projects
€1.4 million

Keywords Map



Keywords search engine

(Todo) ▼

ERA-MIN 2

ERA-MIN

ERA-MIN 3



Co-funded by the Horizon 2020 programme of the European Union

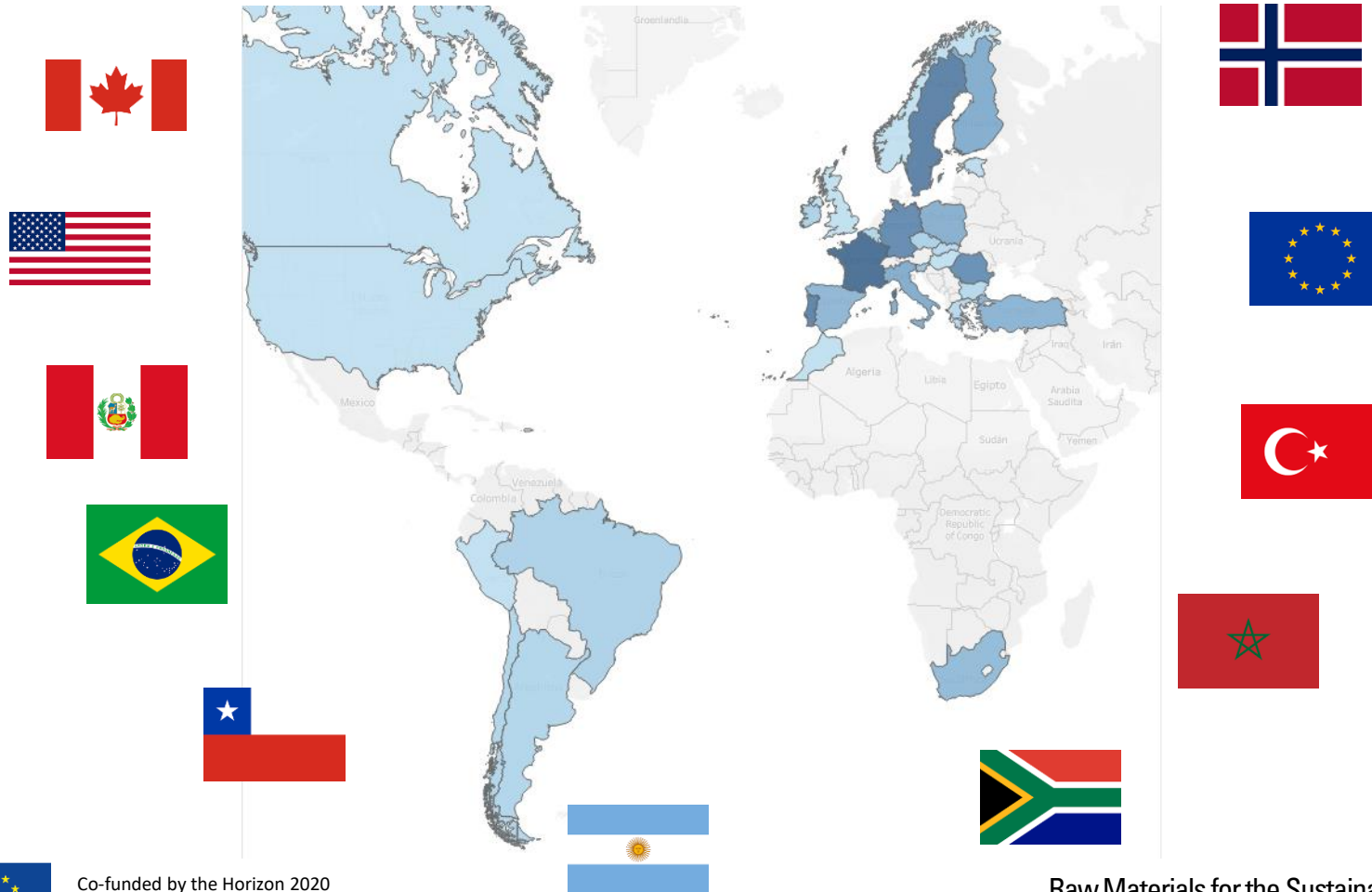
Raw Materials for the Sustainable Development and the Circular Economy

ERA-MIN3 Dashboard

ERA-MIN provides a framework for countries beyond Europe to establish multilateral cooperation



RAW MATERIALS FOR THE SUSTAINABLE DEVELOPMENT
AND THE CIRCULAR ECONOMY



Co-funded by the Horizon 2020
programme of the European Union

Raw Materials for the Sustainable Development
and the Circular Economy

ERA-MIN3 – Raw Materials for the sustainable development and the circular economy

04



ERA-MIN contributions to the EU Raw Materials policies



Co-funded by the Horizon 2020
programme of the European Union

ERA-MIN is fully aligned with the Critical Raw Materials Act

International, mutually supportive partnerships

Global engagement with reliable third countries

Research and innovation

National R&I programmes

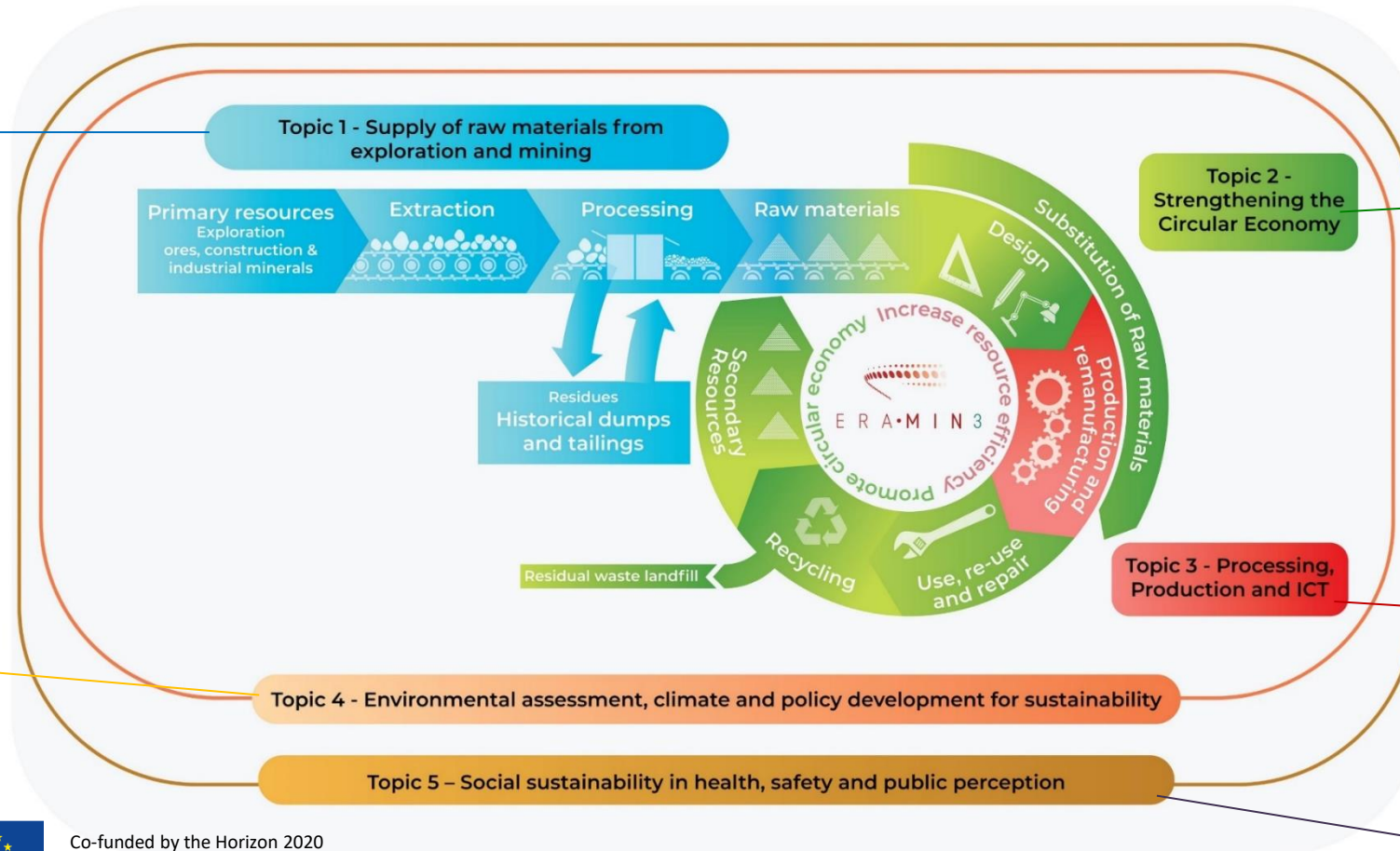
Extraction
Geological resources
Economic resilience
Processing
Sustainable supply chains
Permanent magnets

Circularity
Recycling
Sustainable supply chains
Refining
Processing
Substitution
Permanent magnets

Green and digital
ambitions

Conflict resolution
Labour and human rights
Skills partnership

Simplify permitting
procedures
Sustainability



Co-funded by the Horizon 2020
programme of the European Union

ERA-MIN supports R&I on Critical and Strategic Raw Materials



2023 Critical and *Strategic* Raw Materials (*green* = covered by *ERA-MIN* projects, including *orange=Sweden*)

Aluminium/bauxite

Coking coal

Lithium

Phosphorus

Antimony

Feldspar

LREE (neodymium)

Scandium

Arsenic

Fluorspar

Magnesium

Silicon metal

Baryte

Gallium

Manganese

Strontium

Beryllium

Germanium

Natural Graphite

Tantalum

Bismuth

Hafnium

Niobium

Titanium metal

Boron/Borate

Helium

PGM

Tungsten

Cobalt

HREE

Phosphate rock

Vanadium



Co-funded by the Horizon 2020
programme of the European Union

Copper*

*Nickel**

Synergies with ETP-SMR SRIA priorities

Strategic Ambitions

"2.2.1 Exploration and inventory of resources"

"2.2.2 Mining"

"2.2.3. Mineral Processing"

"2.2.4 Metallurgy/Metals recovery & Recycling"

"2.2.5 Environmental performance"

"2.2.6 Mineral policy and monitoring"

"2.3 Global Partnership"



Topic 1. Supply of raw materials from exploration to mining



Topic 2. Strengthening the circular economy



Topic 4. Environmental assessment, climate and policy development for sustainability



Topic 5. Social sustainability in health, safety and public perception

Very closely link to all aspects of ERA-MIN

Get involved

Contact & Info

Partner Search Tool

<https://www.submission-era-min.eu/partner-search>

Newsletter

<https://www.era-min.eu/newsletter>



- ☐ If you are a **research performing organisation** (including enterprises) , **submit an application** to a future Call for transnational R&I proposals;
- ☐ If you are a **raw materials related project or initiative**, **liaison with ERA-MIN3** to promote synergies.
- ☐ If you are a **research funding organisation** (Ministry or Agency), join the planned new partnership

FOLLOW US



[@eranetmin3](https://twitter.com/eranetmin3)



<https://www.linkedin.com/in/era-min/>



<https://www.era-min.eu/>

CONTACT DETAILS

Coordinator

Ms. Dina Carrilho

Project Manager

Mr. Stefano Amaral

eramin@fct.pt



ERA-MIN3

RAW MATERIALS FOR THE SUSTAINABLE DEVELOPMENT
AND THE CIRCULAR ECONOMY



Co-funded by the Horizon 2020
programme of the European Union

FCT Fundação
para a Ciência
e a Tecnologia