

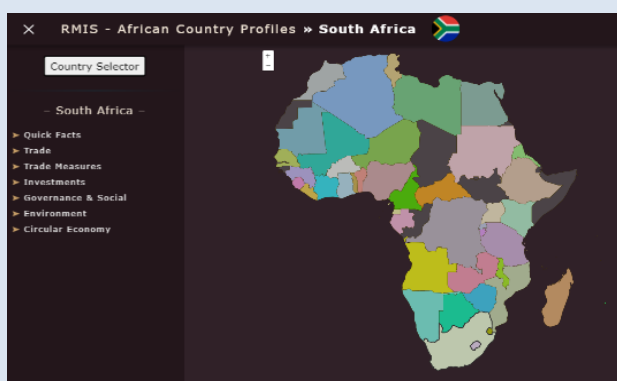


JOINT RESEARCH CENTRE (JRC)
RAW MATERIALS INFORMATION SYSTEM (RMIS)

RMIS Newsletter n.6 (March 2022)

This newsletter is a bi-annual summary of the main developments related to the European Commission's Raw Materials Information System (RMIS). It provides key highlights on raw materials knowledge support to policy.

The African Country Profiles: a new section of the RMIS!



A brand new section has recently been included in the RMIS, focusing on Africa: the [African Country Profiles](#). These profiles have been developed for 40+ African countries, highlighting relevant aspects for EU sourcing, like export restrictions, trade agreements and investments. They also include analyses of the enabling conditions for a more sustainable use of material resources, including with respect to governance and social indicators, circular economy and environmental aspects.

Specifically, each profile is divided into 7 thematic areas: Quick Facts, Trade, Trade measures, Investments, Governance and social responsibility, Environment, Circular economy and resource efficiency.

More info is included in a dedicated section of this newsletter!

1. Raw Materials Week

Every year, DG GROW (The Commission's Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs) organizes the **Raw Materials Week** (RMW). The event gathers a wide range of stakeholders discussing policies and initiatives in the field of raw materials. The sixth edition of the ["Raw Materials Week"](#)¹ took place from the 15th to the 19th of November 2021.

This 2021 edition hosted the [8th annual High-level Conference of the European Innovation Partnership \(EIP\)](#)² on raw materials, where various hot topics and emerging knowledge needs were addressed, e.g. in relation to: Critical Raw Materials, Trends in innovation and Skills for raw materials, EU Horizon technology success stories, EU-Canada Partnership, UNECE Resource management.

Dr. Stephen Quest, Director-General of the JRC, during his [speech](#)³ officially launched the [2021 Raw Materials Scoreboard](#)⁴, an in-depth analysis of Europe's raw material supply chains, their competitiveness and trade flows (see the following section).

Moreover, as part of the 2021 RMW, the JRC organized the so-called ["Knowledge needs - EU-Africa focus"](#)⁵ session, on November 18th. The session was attended by speakers coming from European ([DG JRC](#)⁶, [DG GROW](#)⁷, [DG ENV](#)⁸, [DG INTPA](#)⁹, [DG TRADE](#)¹⁰), international ([OECD](#)¹¹, and [UNDP](#)¹²) and African ([AFDB](#)¹³; [ACEN](#)¹⁴) organizations.

Core focus of the event was the African continent, in terms of raw materials value chains knowledge, and how to bridge the needs arising from the transitions towards a greener Europe, and a fair and equitable development of the African economy.

The speakers introduced the different actions, regulations, and initiatives that are taking place between the EU and Africa, and within different African countries.

The session was opened by Giovanni De Santi, Director of the Directorate for Sustainable Resources (JRC.D), who introduced the importance of strengthening the EU-Africa dialogue..

¹ <https://eu-raw-materials-week-2021.b2match.io/>

² https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_21_6117

³ Available here:

https://www.youtube.com/watch?v=l0xTha44Gp4&t=7924s&ab_channel=LDVprodLIVE1

⁴ <https://ec.europa.eu/jrc/en/news/raw-materials-scoreboard-highlights-urgency-strengthen-resilience-and-sustainability-raw-materials>

⁵ <https://www.youtube.com/watch?v=IUyIstbLuiU&t=15710s>

⁶ https://ec.europa.eu/info/departments/joint-research-centre_en

⁷ https://knowledge4policy.ec.europa.eu/organisation/dg-grow-dg-internal-market-industry-entrepreneurship-smes_en

⁸ https://knowledge4policy.ec.europa.eu/organisation/dg-env-dg-environment_en

⁹ https://ec.europa.eu/info/departments/international-partnerships_en

¹⁰ https://ec.europa.eu/info/departments/trade_en

¹¹ <https://www.oecd.org/>

¹² <https://www.undp.org/>

¹³ <https://www.afdb.org/en>

¹⁴ <https://www.acen.africa/>

De Santi also stated that the EU, as a key trade partner of the African countries, can play a fundamental role in facilitating a fair, greener, and responsible sourcing of raw materials. He emphasized the role of knowledge as the foundation to any further action, and the needs to fill the existing knowledge gaps.

De Santi announced the development of the recently published [JRC's African Knowledge Platform](#) (AKP)¹⁵, which empowers EU policymakers and supports science diplomacy in line with the EU-Africa Strategy and international development agendas. Finally, the Director announced the release of the [African country profiles](#)¹⁶ as part of the continuous development of the RMIS.

Constantin Ciupagea, Head of Unit Land Resources (JRC.D3), gave an overview of the activities and the relevant developments of the RMIS: the [RMIS Roadmap](#)¹⁷, the renewed [Raw materials profiles](#)¹⁸, the just published [EU country report](#)¹⁹. The speech also included a detailed presentation of the RMIS' African country profiles.

Special attention was given to the OECD ["Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas \(CAHRAs\)"](#)²⁰ voluntary standards: embedded in Europe as the [EU Responsible Minerals Regulation](#)²¹ affecting the companies importing 3TG (tin, tantalum, tungsten and gold) from CAHRAs.

During the event, Africa's specific facts and demographic trends that shape currently the Circular Economy discussions and envisaged agenda were presented. With the objective of studying and analysing these topics, DG ENVIRONMENT commissioned a study which resulted in the continental report ["Circular Economy in EU-Africa cooperation"](#)²², and 8 country specific report ([Egypt](#)²³, [Ghana](#)²⁴, [Nigeria](#)²⁵, [Morocco](#)²⁶, [Kenya](#)²⁷, [Rwanda](#)²⁸, [Senegal](#)²⁹, [South Africa](#)³⁰).

Finally, the speakers identified key knowledge gaps on raw materials, mostly related to data availability in certain African countries, as well as in relation to data quality, granularity and coherence. Emphasis was also put on the local know-how and on the tools and instruments that could enhance and strengthen the relation between the EU and the African continent, for mutual benefits.

To complement the event, the JRC has recently published a [proceeding note](#)³¹ of the event, comprehensive of the agenda, the presentations, the speeches' abstracts and an overview of the event.

2. Launch of the 3rd Raw Materials Scoreboard

The 2021 (third) edition of the [EC's Raw Materials Scoreboard](#)³² has been released, with a major contribution from JRC. The document serves to monitor the challenges to a sustainable and secure supply of non-energy, non-food raw materials that are essential to EU value chains.

The Scoreboard's scope goes beyond extraction/processing, reflecting six thematic analyses (clusters). It contains 27 indicators, out of which two are new: Responsible Sourcing and Jobs.

The present edition, which can be explored in the dedicated [RMIS tile](#)³³, adopts a reconfigured structure, closer to the value chain of raw materials.

It first looks at how much the European Union can meet its material's demand and under which framework conditions (Cluster 1). It then analyses the position of the EU in the global market and the geopolitical implications thereof (Cluster 2).

The Scoreboard studies the circularity of the EU economy and the management of specific waste streams (Cluster 3). It also analyses how the EU raw materials sector is doing in key economic areas (Cluster 4), and in what regards its environmental (Cluster 5) and social (Cluster 6) performance.

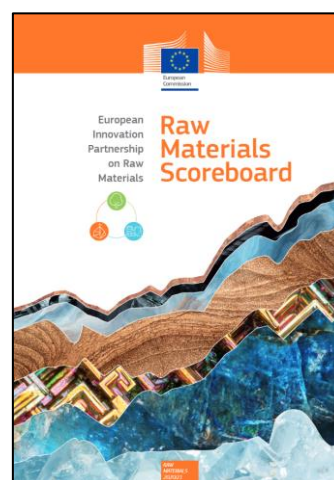


Figure 1. Raw Materials Scoreboard's cover page

The indicators included in the Scoreboard look at a range of raw materials – mostly grouped into e.g. metals, minerals and biomass, but also sometimes individually. While most indicators provide data at EU level, in certain fields they look through the lens of Member State performance.

A selection of five materials used in strategic sectors like clean technologies, digital, space, mobility, and defence applications makes more specific the scope of two of the Scoreboard indicators – [import reliance](#)³⁴ and [trade export restrictions](#)³⁵ – namely: Copper (used in digital and electrical infrastructure); Cobalt (e-mobility); Platinum (electronics); Tungsten (defence and

¹⁵ <https://africa-knowledge-platform.ec.europa.eu/>

¹⁶ <https://rmis.jrc.ec.europa.eu/apps/ap/#/>

¹⁷ <https://rmis.jrc.ec.europa.eu/uploads/library/JRC126612.pdf>

¹⁸ <https://rmis.jrc.ec.europa.eu/apps/rmp2/#/>

¹⁹

https://rmis.jrc.ec.europa.eu/uploads/library/JRCTR_EUCountryProfiles_2022.pdf

²⁰ <https://www.oecd.org/daf/inv/mne/OECD-Due-Diligence-Guidance-Minerals-Edition3.pdf>

²¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R0821>

²² <https://op.europa.eu/en/publication-detail/-/publication/4faa23f2-8b8a-11eb-b85c-01aa75ed71a1/language-en>

²³ <https://op.europa.eu/en/publication-detail/-/publication/26bf5dc9-3e85-11eb-b27b-01aa75ed71a1/language-en/format-PDF/source-251835540>

²⁴ <https://op.europa.eu/en/publication-detail/-/publication/cc861891-3e83-11eb-b27b-01aa75ed71a1/language-en/format-PDF/source-251835540>

²⁵ <https://op.europa.eu/en/publication-detail/-/publication/ef8d12bc-3e8e-11eb-b27b-01aa75ed71a1/language-en/format-PDF/source-251835370>

²⁶ <https://op.europa.eu/en/publication-detail/-/publication/ac782e28-3e8d-11eb-b27b-01aa75ed71a1/language-en/format-PDF/source-search>

²⁷ <https://op.europa.eu/en/publication-detail/-/publication/5ce5d631-3e89-11eb-b27b-01aa75ed71a1/language-en/format-PDF/source-search>

²⁸ <https://op.europa.eu/en/publication-detail/-/publication/238c9074-3e8c-11eb-b27b-01aa75ed71a1/language-en/format-PDF/source-251835514>

²⁹ <https://op.europa.eu/en/publication-detail/-/publication/bf92f4bf-3e8a-11eb-b27b-01aa75ed71a1/language-en/format-PDF/source-search>

³⁰ <https://op.europa.eu/en/publication-detail/-/publication/62768223-3e88-11eb-b27b-01aa75ed71a1/language-en/format-PDF/source-search>

³¹ https://rmis.jrc.ec.europa.eu/uploads/library/RMW_report_final.pdf

³² <https://op.europa.eu/en/publication-detail/-/publication/eb052a18-c1f3-11eb-a925-01aa75ed71a1>

³³ <https://rmis.jrc.ec.europa.eu/?page=scoreboard2021#/>

³⁴ Indicator 8: <https://rmis.jrc.ec.europa.eu/?page=scoreboard2021#/ind/8>

³⁵ Indicator 10:

<https://rmis.jrc.ec.europa.eu/?page=scoreboard2021#/ind/10>

aerospace) and Rare Earth Elements (REEs) (renewable electricity generation).

The document indicates also the links to other monitoring schemes that follow up on aspects relevant to the field of raw materials (the [Sustainable Development Goals](#)³⁶ - SDGs - and the Circular Economy Monitoring Framework).

3. A brand new RMIS section: African country profiles

With a view of strengthening the raw materials knowledge base for Africa, the RMIS team published a new tile that provides quantitative understanding of key raw materials aspects for the African countries.

The [African country profiles](#)³⁷ touches upon key topics such as production, trade, sustainability & circularity, governance, for 40+ countries of the African continent.

Each profile is structured into seven thematic sections:

1. The “Quick Facts” section presents information on the country’s mining contribution to the value added of the economy, and the main country’s raw materials produced.
2. “Trade”: provides information about the African country exports by type of material and destination, with a focus on but not restricted to critical raw materials. It also provides a snapshot of the most relevant materials imported by the EU from the specific country.
3. The “Trade measures”: summarizes the provisions that affect the free trade of raw materials; specifically the trade agreements and export restrictions that involve and are applied by the African country.
4. “Investments”: focusing on foreign direct investments and on mining exploration budgets, offers a view on the overall international investment to the country, with a focus on the companies that do exploration on the African land.
5. “Governance and social responsibility”: collects several humanitarian and socio-economic country-specific indicators, focusing on the natural resource governance, the humanitarian risk, the poverty, and mining workers conditions.
6. “Environment” displays the location of mines in relation with local natural aspects like protected areas, or areas with deforestation or high flooding hazard. Moreover, it shows the amount of greenhouse gases and air pollutant emissions by raw materials sector.
7. “Circular economy and resource efficiency”: collects information on the local waste generation and collection, as well as on the legal and illegal waste trade flows.

4. Annual RMIS workshop

Continuing the well-established dialogue between the RMIS and the European funded projects on raw materials (such as [Horizon 2020](#)³⁸/[Europe](#)³⁹, and [EIT Raw Materials projects](#)⁴⁰), the 2021 JRC / HaDEA Technical Workshop “[Channelling knowledge from](#)

[European projects into the Raw Materials Information System \(RMIS\)](#)”⁴¹ was held online on December 3rd.

The opening session featured presentations from Constantin Ciupagea (HoU, Land Resources, JRC), Victoria Petrova (HoU, Industry, HaDEA), Luca Marmo (Senior expert, SDGs, Green Finance & Economic Analysis, DG ENV), Patrick Nadoll (Senior Advisor, EIT Raw Materials), and Ioannis Bakas (European Environment Agency - EEA).

The overarching aim of the workshop was to facilitate the efficient knowledge transfers from EU projects into the RMIS, so that project’s outputs can best contribute to the RMIS & EU policy objectives.

The workshop saw the active participation of 17 EU funded projects, presenting their objectives and achievements, while more than 30 participated as technical audience. As examples of possible implementations, some of the projects closely interacting with the RMIS presented how their deliverables were included in the platform. A relevant example is the case of Mintell4EU, whose [Mineral inventory](#)⁴² is included in the renewed [Raw materials profiles](#)⁴³.

5. European Commission’s resilience dashboards

The [report on the resilience dashboards](#)⁴⁴ and the related [interactive webpage](#)⁴⁵ have been published. The interactive webpage gives access to the data on resilience at Member States and global level, zoom in on indicators and countries and plot maps to get an overview of the different dimensions and areas of resilience.

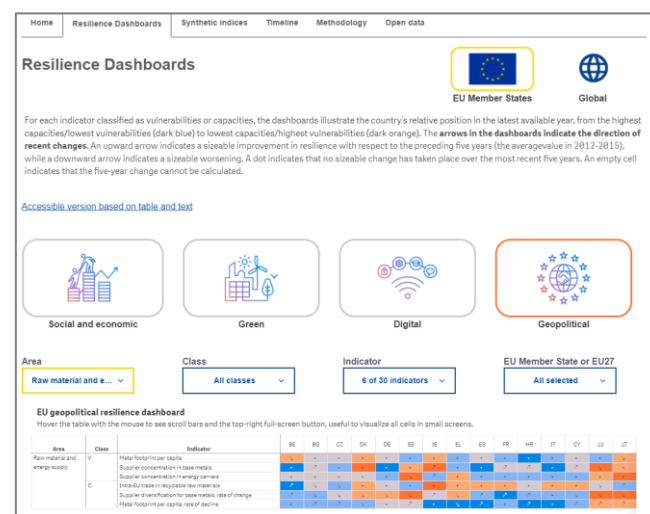


Figure 2. Resilience Dashboards's homepage

The resilience dashboards aim to provide a holistic assessment of resilience. In relation to ongoing societal transformations and challenges ahead, the dashboards assess resilience as the ability to make progress towards policy objectives amidst challenges.

Through a broad set of indicators, the resilience dashboards assess the relative strengths and weaknesses of countries, while also helping Member States identify areas for further analysis and potential policy actions. The indicators span four dimensions: social and economic, green, digital, and geopolitical.

⁴¹ The recordings of the event are available here:

<https://rmis.jrc.ec.europa.eu/uploads/RecordingsRMISWorkshop2021.mp4>

⁴² <https://rmis.jrc.ec.europa.eu/?page=geological-data-157d8a>

⁴³ <https://rmis.jrc.ec.europa.eu/apps/rmp2/#/>

⁴⁴ https://ec.europa.eu/info/publications/resilience-dashboards-report-and-annex_en

⁴⁵ https://ec.europa.eu/info/strategy/strategic-planning/strategic-foresight/2020-strategic-foresight-report/resilience-dashboards_en

³⁶ <https://rmis.jrc.ec.europa.eu/?page=sdg-18f0ad>

³⁷ <https://rmis.jrc.ec.europa.eu/apps/ap/#/>

³⁸ <https://ec.europa.eu/programmes/horizon2020/en/home>

³⁹ https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en

⁴⁰ <https://eitrawmaterials.eu/>

Finally, the [2021 Strategic Foresight Report](#)⁴⁶, following the [2020 Strategic Foresight Report](#)⁴⁷, reaffirms the importance of monitoring resilience and the contribution of the resilience dashboards to measuring wellbeing with an integrated approach.

Further, they help assessing the impact of the Europe's recovery and resilience strategy, including vis-à-vis other key non-EU countries. Raw material value chain issues are addressed under several indicators (specifically Green and Geopolitical) considering the many dimensions including recycling, productivity, trade reliance, and many others.

6. RMIS news & development outlook

- The biannual [RMIS Roadmap](#) has been released: it covers the future developments of the RMIS, with information on the process of definition of the RMIS new focuses, supporting various policy DGs.
- To complement the online version of the EU Country profiles, a new [report](#) covering Estonia, Ireland, Latvia, Lithuania, Luxembourg, Malta, Slovakia and Slovenia has been published in January 2022.
- A new sub-tile called [Autonomy](#) has been included in the RMIS, focusing on the report '[Shaping and securing the EU's open strategic autonomy by 2040 and beyond](#)' a systematic and systemic analysis of the trends and opportunities for the future of the open strategic autonomy, describing trends and issues looking at 2040 and beyond.
- '[Material composition trends in vehicles: critical raw materials and other relevant metals](#)' is a new report published by the JRC. It focuses on the dataset preparation of the new RMIS app (the approach, the background data and the key results) concerning vehicle composition on secondary raw materials which will soon be published.

This is the newsletter of the Raw Materials Information System (RMIS) of the European Commission. It is hosted by the Land Resources Unit of the Sustainable Resources Directorate (JRC-D) of the Joint Research Centre (JRC) in Ispra, Italy. This newsletter is circulated to a broad selection of scientists and stakeholders. Please click [here](#) should you wish to be removed from the newsletter mailing list. The JRC manages e-mail addresses as personal data.

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For more information, check out the [News page in the RMIS](#).

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https://ec.europa.eu/info/sites/default/files/foresight_report_com750_en.pdf

⁴⁷ https://ec.europa.eu/info/strategy/strategic-planning/strategic-foresight/2020-strategic-foresight-report_en

EASME corner

The 2021 DG JRC and HaDEA workshop on the Raw Materials Information System (RMIS)

The yearly RMIS workshop was held virtually on December 3rd 2021 and co-organised by DG JRC and HaDEA. It accommodated a large number of EU funded Raw Materials projects to present their activities, including discussions on facilitating technical dialogue for efficient knowledge transfers.

Six successful projects contributed within the session of 'Projects presentations of key outputs & plans of knowledge transfer into the RMIS'.

The REMOVAL project

In this context, we would like to highlight some excellent results of RemovAl (Removing the waste streams from the primary Aluminium production in Europe).

The [RemovAl](#) project combines, optimizes and scales-up developed processing technologies for extracting base and critical metals from industrial residues and valorising the remaining processing residues in the construction sector.



The groundbreaking objective in RemovAl is the first Pilot scale demonstration of a holistic Bauxite Residue (BR) valorisation in a financially viable and ecologically sustainable manner. Its ambition is to overcome environmental issues and technological barriers related to aluminium industry, by combining and advancing existing technologies for the sustainable processing of BR, SPL and other by-products, generating revenue.

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The 6 Pilot plants are spread across EU: Ireland, Belgium, France, Greece and Germany. Combined, they form a network of technological nodes, enabling optimum processing flow sheets for valorising the produced BR. The RemovAl demonstrated at Pilot scale promising innovation in various technologies:

- De-alkalinisation of BR through atmospheric processing with milk of lime
- Use of BR as a base for road construction
- Production of lightweight aggregates through shear intensive granulation directly from BR
- Production of high strength binders from vitrified BR
- Microwave rotary kiln for the production of iron concentrates from BR
- Production of pig iron and iron-alloys using BR as iron source
- Hydrometallurgical recovery of critical raw materials (REEs, Ga) from slags and process liquors
- Utilization of slags in cement and mineral wool production

Further, the RemovAl project is about overcoming the barriers of economic viability by pooling, integrating proposed solutions together and adhering to the following principles:

- Treat waste with waste
- Recover valuable Critical Raw Materials
- Develop marketable products
- Customise the solution to the industrial ecosystem of each alumina plant.