



Horizon Europe Framework Programme (HORIZON)

D9.1 – Inception Report

WP9 - Task 9.1

31/10/2022 [M5]

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21/11/2022	V 4	S. Balech (LGI)	Jean-Claude Guillaneau (BRGM)	Updates due to comments from partners

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Abbreviations and Acronyms

Acronym	Description
CC	Consortium Committee
DoA	Description of Action
MaCom	Management Committee
PMO	Project Management Office
PQP	Project Quality Plan
PR	Periodic Report
AB	Advisory Board
SN	Stakeholder Network
QA	Quality Assurance
WP	Work Package
WPL	Work Package Leader

Executive Summary

This deliverable D9.1 Inception report provides the consortium with management procedures. This deliverable D9.1 Inception report provides the consortium with management procedures.

This document encompasses the Project Quality Plan, the template for the case studies and the detailed work plan per work package. This will pave the way to describe with sufficient details all the necessary steps for a smooth and accurate overall project management and must provide all the necessary elements to anticipate further activities.

This is a living document, especially the part regarding the detailed work plan and it will be revised at least every year (M17, M29) and each time deemed necessary by the Management Committee.

Keywords

Meetings, Management, Quality process, Detailed work plan, management procedures, templates, case study, ECRM, Mineral potential, Ore processing, Refining capacities, Recycling units, Value chain, Primary raw material, Secondary raw material, Bottlenecks, Finance, Investment, Sustainability, ESG, Land-use, Taxation, Mining regulation, Mining policies, Child labour, Responsible extraction, DRC, Senegal, Zimbabwe, Mozambique, Gabon, Namibia, Tanzania, Madagascar, Morocco, South-Africa, Pan-African.

Dissemination

The Inception Report and its annexes are public document as defined in the GA and will be available on the project website.

1. Project Quality Plan.

1.1. Management aspects

1. Purpose

The following section consists of the Project Quality Plan (PQP) for AfricaMaVal project. It describes requirements and procedural regulations that will help the consortium to complete the project. It presents an instruction guide for participants in AfricaMaVal, as regard information management, document publication, quality assurance issues, project organization, and contact information. Technical rules, e.g., rules for design, licensing procedures, are not included in the present document.

2. Application and validity

The requirements contained in this project quality plan apply to all personnel engaged in AfricaMaVal. Revisions of the contents of the PQP become valid from the date of issue.

3. Administration

LGI is responsible for the administration of the project quality and management plan. Proposals for modifications or additions must be submitted to LGI (please contact sebastien.balech@lgi.earth or Mathilde.videlo@lgi.earth) which updates and issues the revisions of the PQP. All revisions need approval by the Coordinator. Each new issue will be indicated in the revised document by means of a revision number.

1.2. AfricaMaVal project organization

1. Overall organization

All project activities are grouped into ten work packages (WP). The technical WPs are from WP1 to WP7, while WP8 deals with disseminating results, WP9 with project management and WP10 with ethics requirements. The Description of Action (Annex I to the Grant Agreement) describes in detail the content and methodology of each WP.

The main governing structure of the AfricaMaVal project is the Consortium Committee (CC). The Management Committee (MaCom) consisted of Coordinator, WP Leaders, and Levin Sources. The coordination team (coordinator and PMO) ensures the day - to - day management of the project.

The structure of the project is shown below.



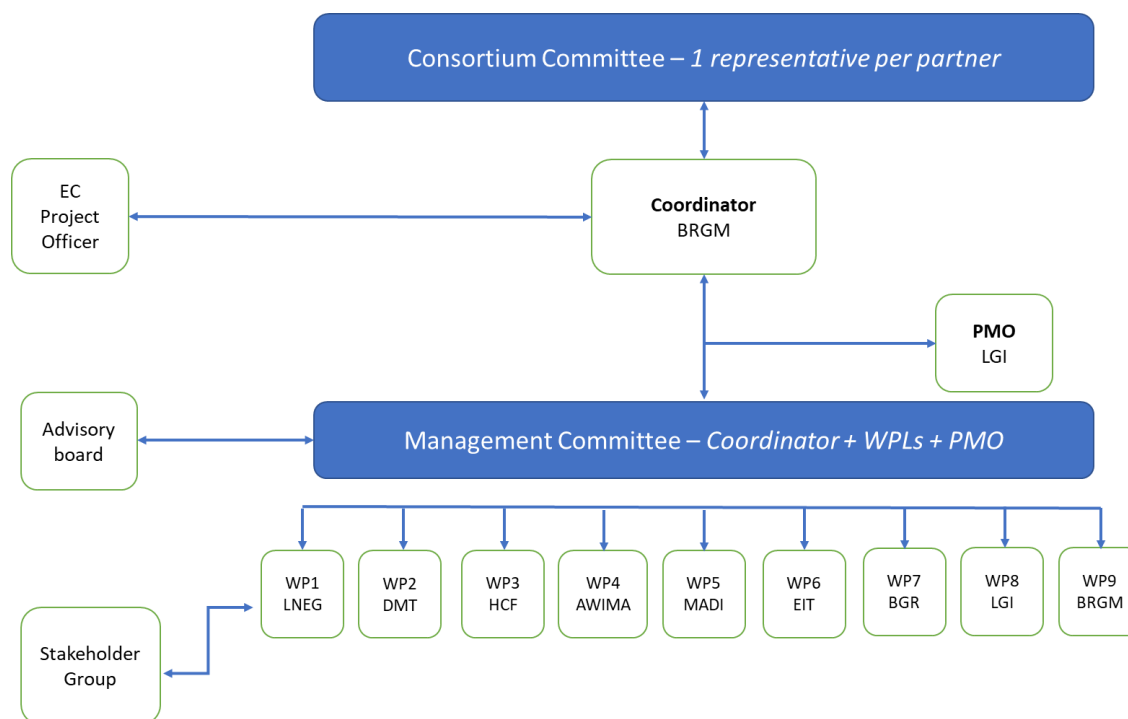


Figure 1 Structure of the project

2. Description of project bodies and actors

The central project bodies and actors are listed below.

Consortium Committee

Table 1 Consortium Committee

Organisation	Main contact	Secondary contact
BRGM	Jean-Claude Guillaneau	Carol Zammit
DMT	Nikolaos Christou	Lukas Förster
EIT Raw Materials	Andrea Dahik	Roland Gauss
BGR	Philip Schütte	Gudrun Franken
HCF	Andor Lips	Eloise Nederveen
AWIMA	Zenzi Natasha Awases	Georgette Barnes
LGI	Sebastien Balech	Mathilde Videlo

INTRAW	Vitor Correia	W. Eberhard Falck
AHK	Simon Doleschal	Sellen Sewpershad
SSSA	Fabio Iannone	Eleonora Annunziata
NUST	Harmony Musiyarira	Mallikarjun Pillalamarry
EGS	Patrick Wall	Céline Andrien
Levin Sources	Holger Grundel	Leon Riedel
MADI	Frank Mugenyi	Elisabeth Byarugaba
LNEG	Daniel de Oliveira	Carla Fortes
WR Forum	Shahrazad Manoochehri;	Robin Gilli

WP Leaders

Table 2 WP Leaders

Role	Name of leaders	Organisation
WP1 Leader	Daniel de Oliveira	LNEG
WP2 Leader	Nikolaos Christou / Lukas Förster	DMT
WP3 Leader	Andor Lips	HCF International
WP4 Leader	Zenzi Natasha Awases	AWIMA
WP5 Leader	Frank Mugenyi	MADI
WP6 Leader	Andrea Dahik / Roland Gauss	EIT RawMaterials
WP7 Leader	Philip Schuette	BGR
WP8 Leader	Joy Cremesty	LGI
WP9 Leader	Jean-Claude Guillaneau / Carol Zammit	BRGM

Advisory Board

Table 3 Advisory Board

Organisation	Name	Status
African Minerals and Geosciences Centre	Ibrahim Shaddad	Confirmed
Geological Survey of Namibia	Anna Nguno	Confirmed
European Raw Materials Alliance	Bernd Schäfer	Confirmed
University of the Witwatersrand	Nellie Mutemeri	Confirmed
DG for Internal Market, Industry, Entrepreneurship and SMEs	Madalina Ivanica	Confirmed
Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development	Isabelle Ramdoo	Confirmed
GIZ	Tim Schloesser	Confirmed
Geological Survey of Namibia	Anna Nguno	Confirmed
African Development Bank	Jerry Ahadjie	Confirmed
World Bank	Sven Renner	To be confirmed
Enviroserve	Olivier Mbera	To be confirmed
European Commission within ITIE	Sergio Pizzardi	To be confirmed
African Minerals Development Centre	Marit Kitaw	To be confirmed
World Wildlife Fund	Tobias Kind-Rieper	To be confirmed
Extractive Industries Transparency Initiative		To be confirmed
UNDP	Lacina Pakoun	To be confirmed
AMDC	Marit Kitaw	To be confirmed

Stakeholder Network

The Stakeholder Network is developed during the project with the addition of new Stakeholders. A first meeting took place during the kick-off meeting.

3. Management web platform of the project

The project’s web-based document management tool is created for internal exchanges and publication of reports and deliverables.

The final documents foreseen in the framework of AfricaMaVal will be uploaded at the AfricaMaVal management web platform. The address to access the AfricaMaVal online shared workspace is <https://app.flexx.camp/africamaval>

The PMO (LGI) is in charge of uploading the final deliverables on the Flexx platform.

LGI is in charge of account creation and right access configuration; requests for a new account or proper access should be sent to sebastien.balech@lgi.earth

Screen capture of the login page of AfricaMaVal FLEXX is shown below.

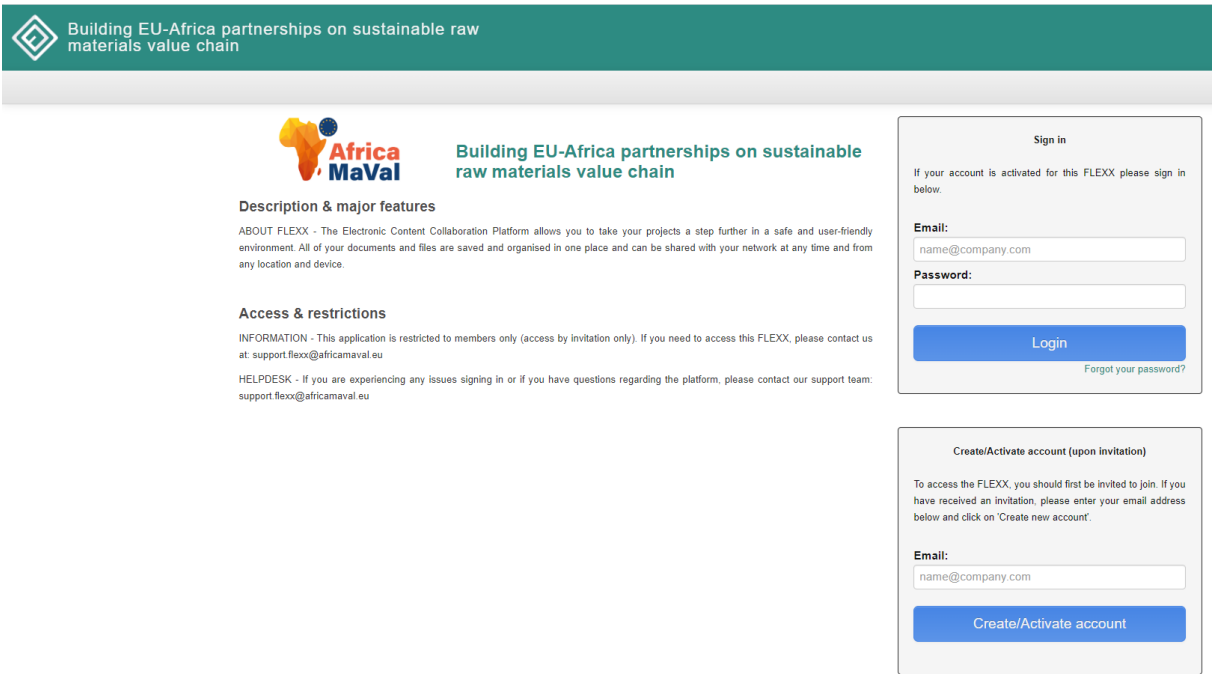


Figure 2 AfricaMaVal FLEXX login screen

The content of the AfricaMaVal FLEXX is shown as follows and can be updated when needed.

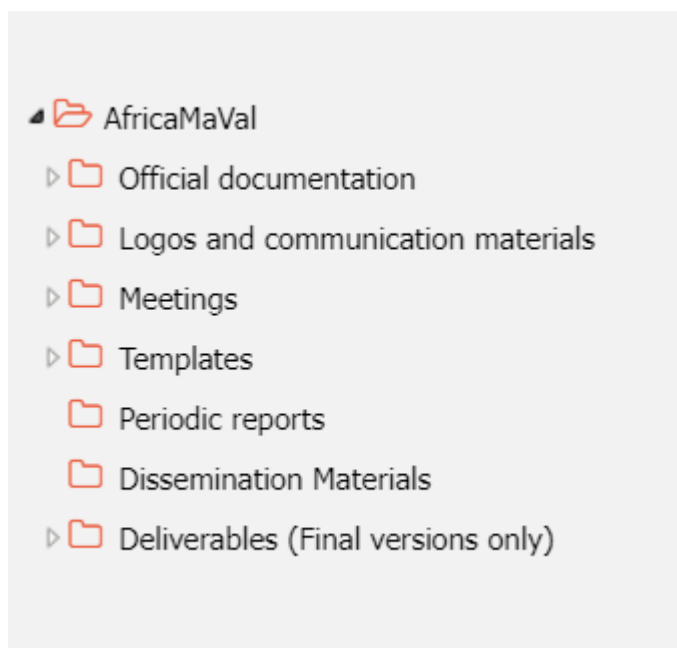


Figure 3 AfricaMaVal Folders

4. Teams channel

For the day to day work on the project, a dedicated Teams channel has been created and is hosted by BRGM. The Teams channel server for AfricaMaVal are hosted in Europe.

All partners from the project have been invited. The structure of the channel will evolve with the project lifetime. The current one is represented in the figure below.

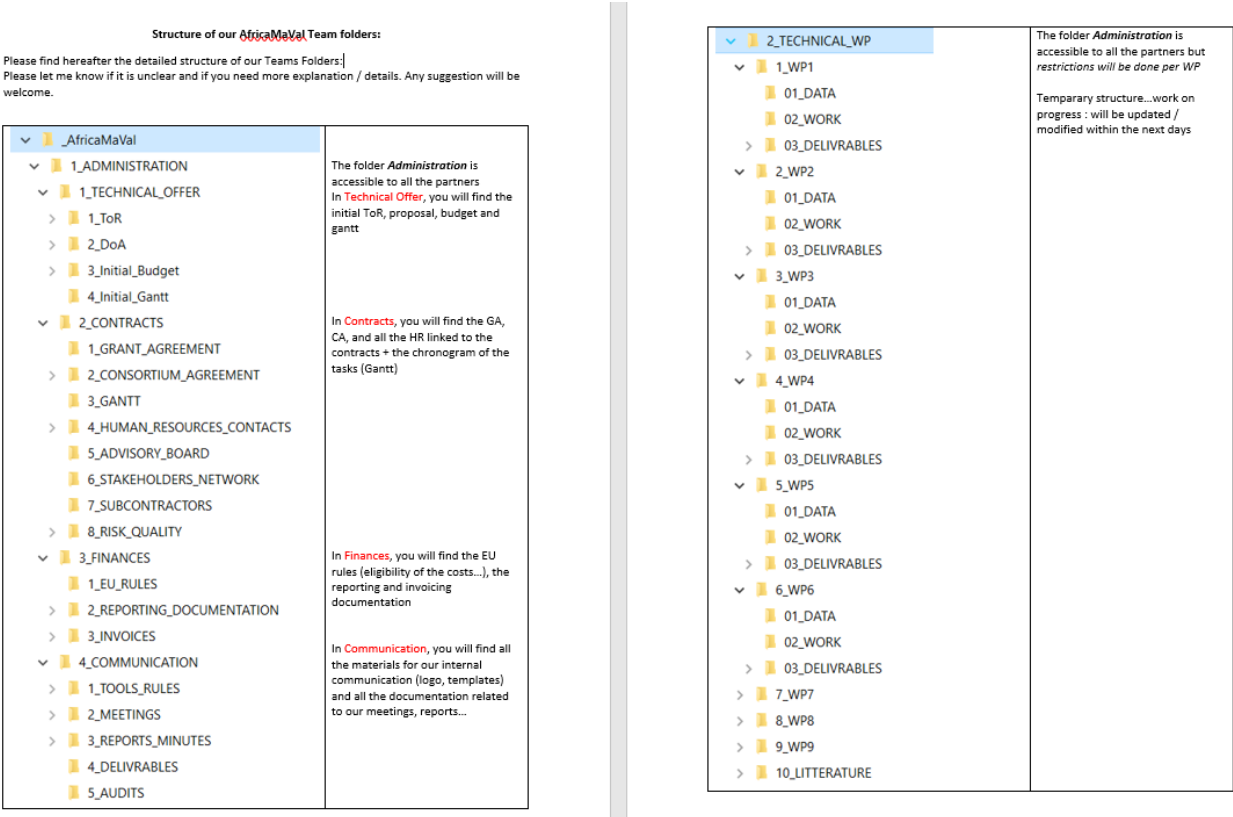


Figure 4 AfricaMaVal Teams Folder structure

Partners are able to work collaboratively on documents in draft version, using the Sharepoint feature embedded on Teams.

This Teams channel will centralise the different documents used in the project, avoid transferring files via email and being compliant with GDPR.

5. Meetings

During the project, two types of meetings will take place: technical meetings and official consortium meetings.

Technical meetings

Both the Coordinator and WP Leaders can organise periodic or ad-hoc technical progress meetings. All technical participants, as well as the Coordinator and the PMO shall then be notified electronically. Other participants will be notified on a case by case basis.

After the meeting, the organiser must write minutes and make them available on the management web platform, Teams, in their technical WP folder. Additionally, a specific folder related to the meeting shall be created in this folder “Minutes_Meeting”.

Official consortium meetings

Official consortium meetings are organised regularly through the project. They are organized in collaboration between the project coordinator and the PMO.

For these meetings, partners are notified in advance and the agenda is made available to all. Minutes are reported by the PMO, reviewed and completed by the coordinator. Then they are sent to partners for a final review and their final version of the minutes and the agenda are stored on the platform FLeXX in this folder: <https://app.flexx.camp/mso/ecm/africamaval-ecm-folder-11897>

6. Information management

Given the number of AfricaMaVal beneficiaries and the importance of the information and documentation management tasks, several rules apply.

The documents produced in AfricaMaVal fall into several categories:

- Contractual technical documents, including technical deliverables and milestones, can be public or restricted to the AfricaMaVal participants and the EC. The validation process is described below.
- Other technical documents, which include non-contractual reports, support documents, and progress meeting minutes, are restricted to AfricaMaVal participants and the EC.
- Non-technical documents, including administrative and financial documents, general communication, etc. are restricted to AfricaMaVal participants and the EC.

In order to simplify the document preparation, an automatic document validation tool is in place, ensuring compliance with EC and the AfricaMaVal template document requirements. The validation procedure involves the use of the electronic signature.

This chapter defines the project's internal procedures for elaboration and dissemination of documents.

7. Preparation of contractual technical documents

General principle

The main principle regarding document preparation and internal dissemination is that each beneficiary applies its own rules and procedures. Each partner organisation should use its own Quality Assurance (QA) procedures and/or templates to prepare its contribution to AfricaMaVal documents. If the beneficiary is not obliged to use internally controlled guidelines and templates, these shall be provided by the project management office and should be used for all documents.

Additionally, some specific rules are required for information management at the project level in order to ensure conformity of view, consistency of administration, and traceability of documentation. The object of this chapter is to define these rules.

Contractual technical document issuing process

The various steps necessary to issue contractual technical documents, including deliverables and milestones, are presented below.

Deliverable preparation and validation process

In order to ease the quick validation of project deliverables, an online platform and process have been set up.

Deliverable preparation

Before processing the document under the process workflow, it is important to note that the deliverable should be prepared on Teams following this process:

- As soon as possible and at the latest 2 months before the official deadline, the author must prepare the deliverable on the Teams platform. Please create the document in the following folder:
Documents/General/1_ADMINISTRATION/4_COMMUNICATION/4_DELIVERABLES/Draft
- Notify the different contributors and the project coordinator that the initial draft is available in this folder.
- This is the working document for the deliverable. All contributors can work collaboratively on this draft and no versioning is necessary.

Once the deliverable is ready for the review, the author must notify the related WP leader and the project coordinator that the deliverable is ready for a technical review.

Once the deliverable reviewed and validated and that the formatting is ready, the deliverable is ready to be processed under the workflow.

Workflow process

The AfricaMaVal Workflow is an online tool designed by LGI to follow-up the project deliverable progress and to facilitate publication and approval of deliverables while ensuring the appropriate Quality Assurance process.

The AfricaMaVal Workflow has been released in June 2022.

The administrator (LGI) creates members' accounts for the AfricaMaVal Workflow (the flow can be accessed with the same login/passwords as the collaborative platform).

The process looks as follows:

1. The main author, who is responsible for the elaboration of the document, asks all involved participants to write their contribution to the document (c.a. two months before the delivery date). As a general rule, a draft should be in a pre-final version one month before

the submission deadline to be reviewed by the concerned partners. It is recommended to use the AfricaMaVal template for all contributions to facilitate the preparation step.

2. After gathering and consolidating all participants' contributions, the main deliverable author issues the final version of the report with his/her own procedures. The author then uploads the finalised pdf version of the deliverable on the Workflow tool. The main responsible person for the deliverable has also to provide the abstract and the names of the deliverable contributors into the Workflow tool.
3. The WP Leader will receive an automated email stating that the deliverable is available for review. Thus, the WP Leader reviews the technical content of the document.
 - If the report does not require any modifications, the WP Leader will validate the deliverable. Thus, the next person in charge of the validation will be informed via an automated email that he/she has to verify the deliverable.
 - If modifications are needed, the WP Leader will reject and comment on the document and the author will be immediately informed. Once the updates are implemented, the main author can upload the revised deliverable on the Workflow. At this point the process will go on until the validation.
4. The next responsible person for the deliverable evaluation is the Coordinator, who will receive an automated email to inform that the deliverable is available for review. The Coordinator will check the deliverable's coherence, following the same way: either modifications are required and the report will be revised, or there are no modifications needed and the report is validated. The Coordinator needs to approve the deliverable.
5. The final inclusion of the review validation page into the deliverable will be incumbent upon LGI. This final step will allow having the validated deliverable ready for publication in the management web platform ("Deliverables (Final versions only)" folder: <https://app.flexx.camp/mso/ecm/africamaval-ecm-folder-12053>), and for delivery to the EC by the Coordinator.
6. Note: The size of the pdf document is limited to 20 MB.
7. This workflow process can be illustrated as shown below.
- 8.

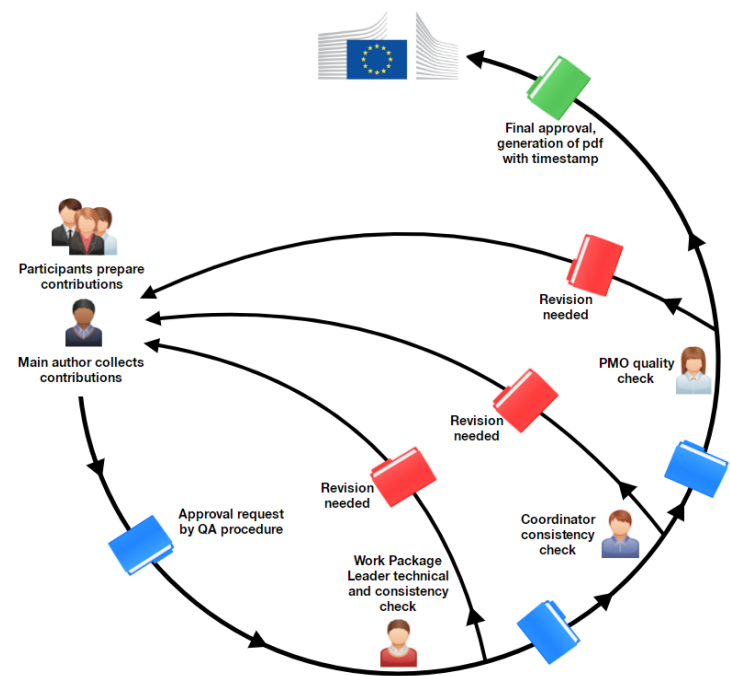


Figure 5 Workflow validation process for the deliverable submission

8. Specific case of periodic reporting for the EC

According to the Grant Agreement, the Coordinator is responsible for issuing the periodic reports (financial report and activity report) to the EC. The procedure to prepare these reports starts from the top level of the project and goes down through the various management levels. The reporting is divided into a financial part and a technical part. To ensure high quality and timely reporting, the PMO will use the approach outlined below. Being responsible for the execution of the entire reporting process, the PMO will provide support to the Coordinator to ensure the quality of this reporting. For the financial part of the reporting, the procedure is shown below.

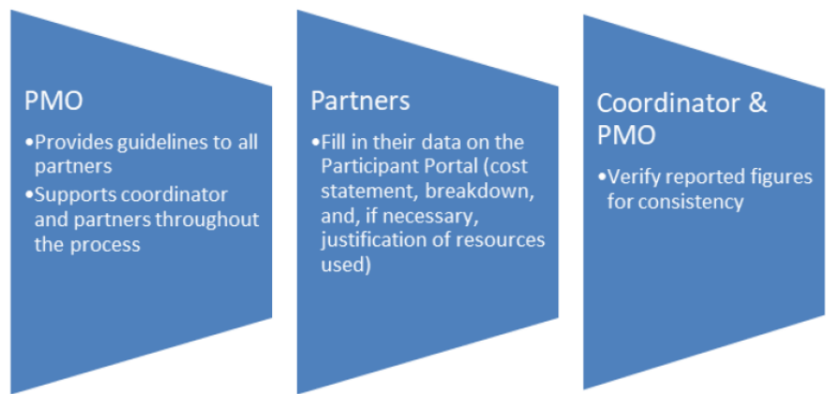


Figure 6 Procedure for the financial periodic reports

On the other hand, for the technical part of the reporting (project progress) the process is as follows:

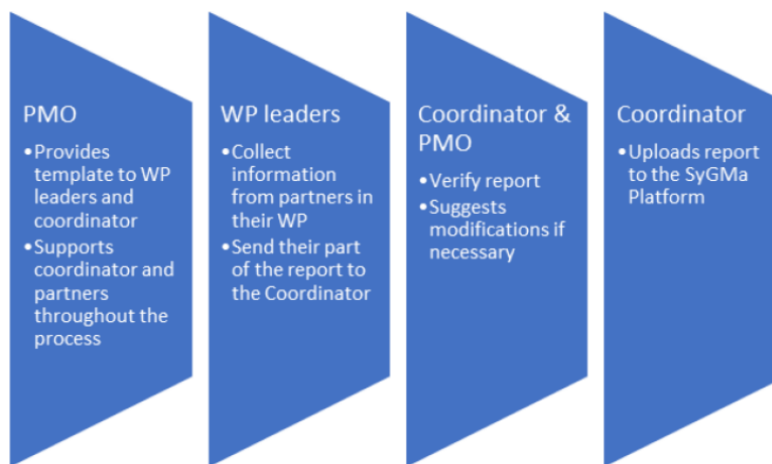


Figure 7 Procedure for the activity periodic reports

Moreover, the Work Package Leaders (WPLs) are responsible for verifying and confirming the consistency between the funding needs and the resources as defined in the Grant Agreement. If adaptations appear to be necessary, the WPLs have to inform the Coordinator, who may propose to the Management Committee some adaptations of the distribution of tasks and funding between the WPs, and if necessary, between beneficiaries (N.B. such changes require approval from the Consortium Committee).

9. Preparation of other technical documents

This section concerns the preparation of other technical documents, in particular non-contractual reports, support documents and progress meeting minutes.

For these documents, the steps are similar to those described in the previous section but the procedure is simplified. In particular:

- AfricaMaVal templates are used without any reference to the internal QA of the beneficiaries involved.
- No document approval form is used. Only the validation of the WPL and Project Coordinator appear on the second page of the document.

In the particular case of joint meetings concerning more than one work package, all concerned WPLs shall approve the minutes.

The template for meeting minutes is available on the FLEXX platform.

10. AfricaMaVal document templates

Mandatory templates to be used for AfricaMaVal documents are provided at <https://app.flexx.camp/mso/ecm/africamaval-ecm-folder-11898>. For any questions regarding the use of these templates, the PMO can be contacted (see contact information in Annex 1).

The templates available to all partners are as follows:

- Template for AfricaMaVal deliverables at <https://app.flexx.camp/mso/ecm/africamaval-ecm-file-35078>
- Template for AfricaMaVal meeting minutes at <https://app.flexx.camp/mso/ecm/africamaval-ecm-file-35203>
- Template for AfricaMaVal PowerPoint presentations at <https://app.flexx.camp/mso/ecm/africamaval-ecm-file-35079>

The format for the final documents should be a PDF file.

11. Distribution

When approved, the Coordinator is responsible for distributing the contractual documents to the European Commission following procedures established between the two Parties.

The dissemination of the deliverables, milestones, and other reports within the consortium is made via the AfricaMaVal management web platform. The publication rules are defined in the Consortium Agreement.

12. Public events

All partners shall take appropriate measures to engage with the public and the media about the project results and highlight the EC financial support. Any publicity, including at a conference or seminar or any type of information or promotional material, must specify that the project has received EC funding and display the project logo, the European emblem. Moreover, it must indicate the following disclaimer (translated into local languages where appropriate):

“Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not reflect those of the European Union or European Health and Digital Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.”



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Figure 8 EU Emblem and Project Logo

For any public presentations, a beneficiary should use the AfricaMaVal templates available on the platform <https://app.flexx.camp/mso/ecm/africamaval-ecm-folder-11898>.

1.3. Publications

The beneficiaries can submit articles to peer-reviewed journals or present communications at conferences on the studies performed in AfricaMaVal. The rules as follows apply for submission.

- Under no circumstances can a beneficiary publish the contribution of another beneficiary without its approval.

The main author must upload the document on the collaborative online platform work folder of the relevant WP and provide partners with (minimum) 15 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Coordinator and to the Party/Parties proposing the dissemination within 21 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.

- All accepted publications related to AfricaMaVal shall be uploaded in the dedicated “Publications” folder of the collaborative platform <https://app.flexx.camp/mso/ecm/africamaval-ecm-folder-11900>
- Once accepted all public publications will be uploaded on the AfricaMaVal Website under the category Resources.

“Normal circumstances” exclude cases with a severe external deadline (e.g., Ph.D. thesis manuscript submission). In this case, a preliminary version should be sent to the WP Leader and the Scientific Coordinator for formal validation. The final version should be uploaded to the platform.

2. Case study template

The case study template aims at steering the different partners to perform the different case studies planned in the project. This template is available in annex of this document.

The template is composed of seven chapters, representing the project WP, namely:

- Extended Critical Raw Materials supply potential of “country”
- Assessment of the ECRM value chain
- Financing and investment instruments
- Assessment of social, environmental and governance challenges
- Business network between EU and “country”
- Energy and digital transition: develop a strategy for EU and Africa Partnership
- Responsible investment opportunities

These different chapters are divided into several subchapters to support the different studies.

Instructions have been drafted to precise the type of information needed in all the chapters and sub chapters.

The full template with complementary instructions is available in the annex 8 of this document.

The figure below represents the Gantt chart for the different case studies.

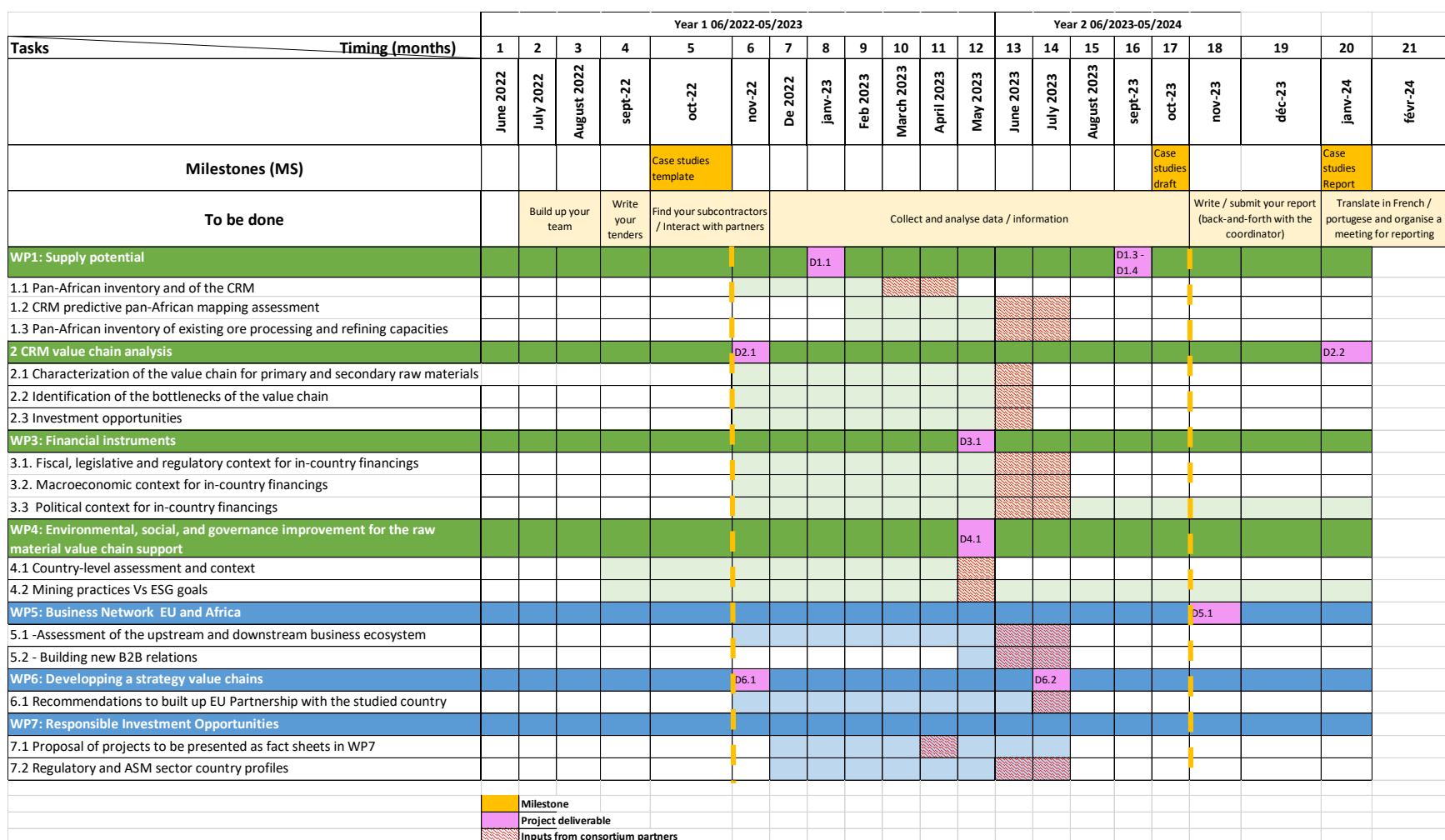


Figure 9 Gantt case studies



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3. Detailed Work plan

3.1. Description of WP1 “Supply potential” activities

Start date: M1 (June 2022); End date: M24 (May 2024)

Work Package Leader- co-Leader: Daniel de Oliveira, Carla Fortes (LNEG)

1. Task 1.1.: Pan-African inventory and of the ECRM

Start date: M1 (June 2022) End date: M8 (January 2023)

Task Leaders: Daniel de Oliveira, LNEG; Carla Fortes (LNEG)

Contributors: Carol Zammit, BRGM; Laurent Bailly, BRGM; Léane Verhulst (BRGM); Matthieu Chevillard (BRGM); Anthony Pochon (BRGM); Philip Schütte (BGR); Jürgen Vasters (BGR);

The aim of this task is make a review of published studies and reports that will go towards providing an INSPIRE-compliant accurate inventory of: (i) the non-energy, mineral raw materials deposits and where possible distinguishing between active and abandoned deposits; and (ii) incorporating, where possible, available mineral resource/reserve data: This task will be conducted through a desk study based on available international mining databases (S&P, SIG Afrique) without infringing on copyrighted private or confidential sources, published scientific papers and mining press-releases (e.g., ASX and Sedar-related), and available project development studies.

The issue of compiling Inspire-compliant minerals data and making them available to everyone of line started almost a decade ago with project EuroGeoSource (Fortes et al., 2013).

Evolving from that was the implementation of project Minerals4EU where a significant leap was made to augment existing data sets and make these more complete and describe more closely the reality in mineral deposits and their variations (e.g., Cassard et al., 2014a, 2014b; Vuollo et al., 2014, Cassard et al., 2015). The previous work carried out in this domain has laid a solid foundation for the work that is proposed in AfricaMaVal.

Given the huge amount of work that has already been carried out in establishing a Inspire-compliant DB for pan-European mineral occurrences and deposits, the Minerals4EU DB structure will be used as a template to map the available African data. However, there is also an established DB termed Sig-Afrique, which contains minerals data from Africa and is owned by BRGM.

To optimise time and resources, both of these will be merged to create a single Inspire-compliant DB that has the existing data and will be updated with newer data that will be gathered from independent reports, commercial DB's such as S&P Global DB. Simplistically, Fig. 1 summarises the methodology.



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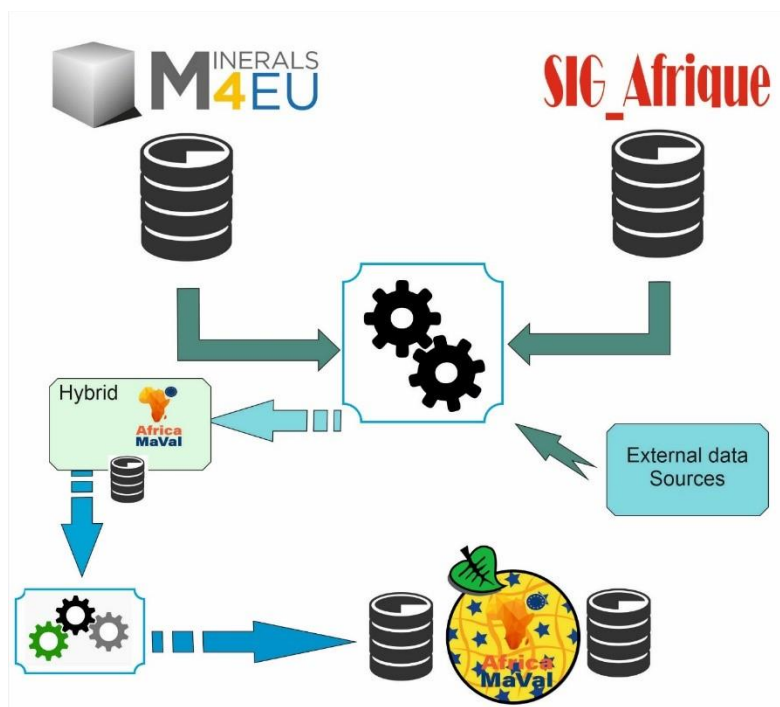


Figure 10 Proposed methodology for arriving at an AfricaMaVal Inspire-compliant DB using available resources.

Methodologically, this requires expertise from both contributing partners to join the data such that it can then be mapped to Inspire and subsequently disseminated. All the data from both private and confidential sources will not be open, but simplified and merged before dissemination occurs.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Making a template for INSPIRE compliant DB for inventory of Africa's ECRM deposits	01/06/2022	30/09/2022	Carla Fortes, LNEG/Carol Zammit, BRGM
Action 2: Populating the DB	01/06/2022	31/01/2023	Carla Fortes/Cátia Prazeres, LNEG

2. Task 1.2: ECRM predictive Pan-African mapping assessment

Start date: M8 (January 2023) End date: M24 (May 2024)

Task Leaders: Guillaume Bertrand, BRGM

Contributors: Daniel de Oliveira, Carla Fortes, LNEG

The aim of this task is two-fold: 1- apply well-established mineral prospectivity methods (e.g., DataBase Querying DBQ approach and Cell-Based Association mineral prospectivity methods) on the pan-African dataset for determining several areas of mineral potential interest for future exploration opportunities of the by-product CRM related to base-metal deposits (e.g., In and Cu deposits; Ge and Zn-Pb deposits), and, 2- to allow potential identification of commodities, which

are either rarely reported in analyses or through permit/deposit reports published by mining companies.

Mineral prospectivity mapping at continental scale:

The basic purpose of prospectivity mapping is to assess the spatial distribution of the favorability of occurrence of a non-random phenomenon (assuming that a phenomenon cannot be predicted if it is purely random). In the case of mineral prospectivity mapping, the phenomenon is the occurrence of a mineralization.

A large number of mineral prospectivity mapping methods exist. They could be grouped in two categories:

- The “expert guided” methods rely on the existing knowledge of experts, in the form of e.g. exploration guides or metallogenetic models. These guides are searched to discover analogs and hopefully new mineralization. This is more or less how mineral exploration was empirically conducted by economic geologists in the past centuries. The development of computers and databases during the last decades allowed to automatically process larger volumes of data and thus improve the accuracy and reliability of the methods;
- The “data driven” methods rely more on the processing of data to deduce “knowledge” (“learning” from input datasets) that is then used to assess the favourable areas to discover new mineralization. Data driven methods largely progressed in the past decade with the tremendous development of computing capacities and databases.

When it comes to mineral prospectivity mapping at continental scale (which is the goal of this work), encompassing huge geographic coverage, numerous geological environments and large volumes of data, data driven methods are well appropriate. In this work, we have used a data driven approach – the CBA (for Cell Based Association) – that has been recently developed by BRGM (Tourlière et al., 2015).

Rationale of the CBA method:

Most data driven mineral prospectivity mapping methods are based on unequivocal relationships between points (known deposits) and the cartographic entities that contain them (pixels or polygons). The knowledge “learned” by the process will be solely based on this unequivocal relationship. For instance, a deposit will unequivocally be linked to the lithology polygons that contain it, without considering surrounding lithologies. This “shortcut” may lead to several issues that could significantly bias the results.

The first issue resides in the uncertainties in polygon contours and point location. Cartographic objects are drawn with a certain error in their location, which could be significant, especially at continental scale. That may result in a wrong association between a point (deposit) and a polygon (lithology). In addition, geological maps display surficial formation that could cover large areas but are not related to mineralization.

The second issue resides in the fact that the surface of polygons are often considered a relevant parameter for weighting. That is the case for instance in the Weight of Evidence method (Bonham Carter et al., 1989, 1990; Agterberg et al., 1991 ?) where surfaces of lithological formations are used to calculate density of deposits. This may lead to artefacts because geology is in 3D and the surface extension of a formation is not necessarily related to its overall importance.

The third issue resides in the spatial distribution of points that is often not considered in data driven mineral prospectivity methods. That may lead to the inappropriate generalization of a local feature to a whole formation. For instance, skarn deposits are not located in a whole carbonate formation, but along its contact with intruding magmatic bodies.

To solve these issues, we believe that considering the geological environment around known deposits and “learn” from this information to assess the favorability is more appropriate than considering solely the “point-polygon” unequivocal link. The CBA method has been developed with this underlying base principle.

Description of the CBA method:

The application of the CBA method relies on a succession of relatively simple steps of data processing and calculation. The basic needs in terms of data to apply the method are 1) a set of known deposits containing the targeted commodity in the area of study (learning set) and 2) a map of geological features. In the present study, we have used datasets of deposits produced by work packages 4, 5 and 6 of the FRAME project, and the 1:1500000 geological map of Europe compiled by BRGM (Billa et al., 2008).

The first step of the CBA method is to superimpose a regular grid (“cells”) over the area of study (Figure 2). The size of the cells is an important parameter that is directly connected to the scale of the input map. If they are too small, most of them will intersect only one lithology polygon, if they are too large, they will intersect too many (if not all) lithology polygons. The cell size needs to be carefully chosen to allow sufficient lithological association variability in all the cells.

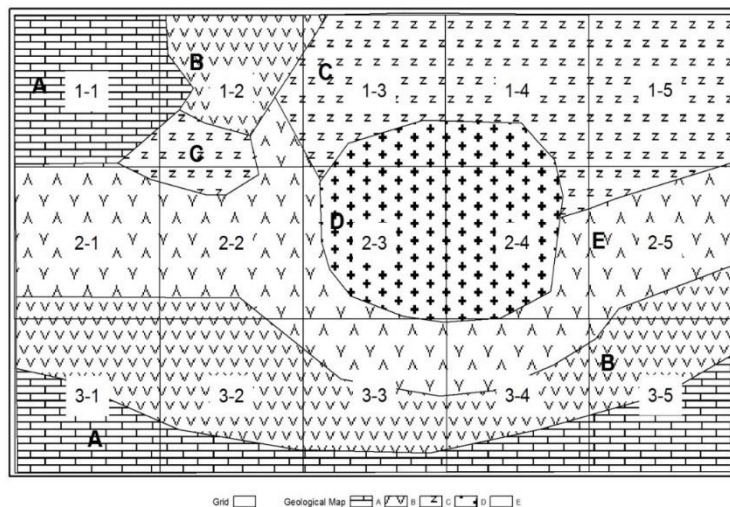


Figure 11 - The first step of the CBA method is to superimpose a regular grid over the area of study.

In the second step, an attribute table is built from the intersection between the grid and the map polygons (Fig. 3). This attribute table codes the presence (1) or absence (0) of each lithology in each cell of the grid. It then provides a “lithological spectrum” that describes the lithological associations in all cells of the grid. Note that the surface of the intersection between lithological polygons and cells is not considered, because it is likely meaningless in 2D (as geology is 3D).

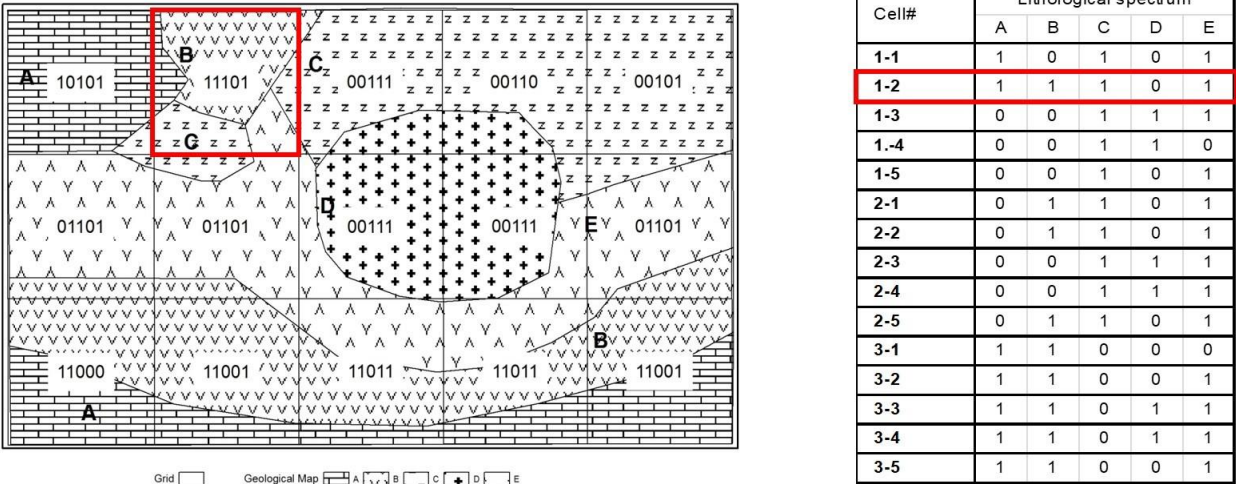


Figure 12 – Each cell of the grid (left) is coded in an attribute table (right) for the presence (1) or absence (0) of each lithology.

In a third step, we identify the lithological associations related to known deposits. To do so, a buffer is drawn around each deposit, which surface is equal to those of cells. Lithological associations in all buffers are coded similarly to grid cells. At the end of this process, we have built two attribute tables to describe lithological associations: one for the cells of the grid and one for the buffers around known deposits. The lithological associations in buffers are associated with deposits and are then considered favourable. The following step is to compare lithological associations of grid cells and buffers. A simple way is to consider as favourable all associations in grid cells that are exactly similar to a favourable association in deposit buffers. For instance, in Figure 4, the two green cells in the upper middle of the figure could be considered favorable because they have exactly the same association found in deposit 2 buffer. Another way to compare lithological associations in grid cells and buffers is to group them, using algorithms such as AHC (ascending hierarchical classification). A third way is to score all cells of the grid on their similarity with favourable associations in the buffers. The latter yields a continuous range of values for all cells of the grid, allowing a more precise assessment of their relative favourability.

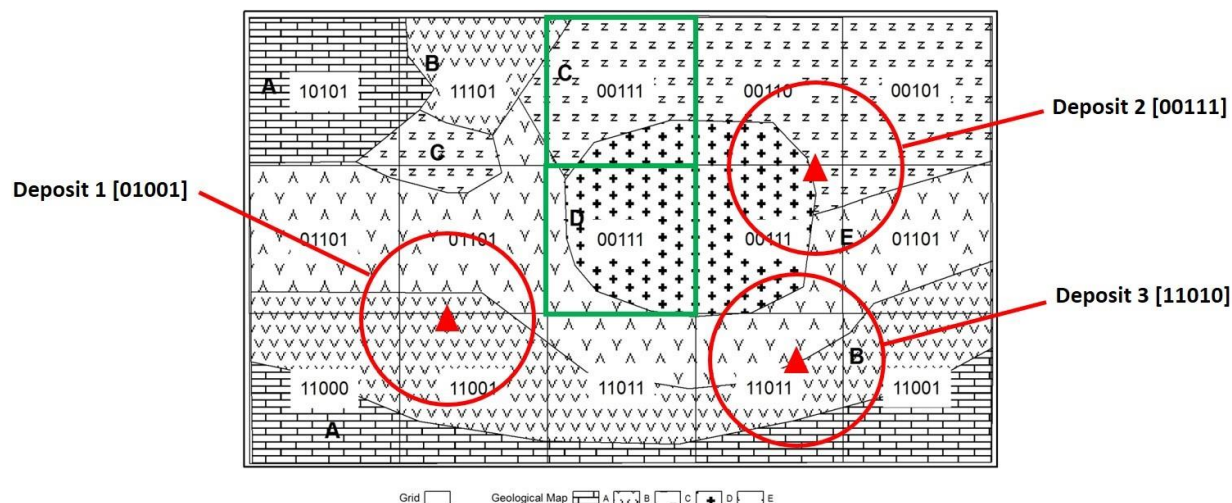


Figure 13 - Lithological associations in cells and deposit buffers are compared to identify favourable cells.

Specific developments:

In the present work, we have chosen to score (rank) all the cells of the grid on the similarity of their lithological associations with those contained in the deposit buffers. To do so, we use a frequency ratio (FR) that is calculated according to the following formula:

$$\text{FR} = \frac{\text{frequency of lithology } n \text{ in all deposit buffers}}{\text{frequency of lithology } n \text{ in all cells of the grid}}$$

FR shows if a lithology is preferably associated with known deposits ($\text{FR} > 1$) or not ($\text{FR} \leq 1$).

There are certainly many ways to combine frequency ratios to calculate the score of each cell. In this work, we have tested five of them that are:

- The sum of FR of all lithologies present in the cell;
- The product of FR of all lithologies present in the cell;
- The sum of “favourable” lithologies ($\text{FR} > 1$) present in the cell;
- The product of “favourable” lithologies ($\text{FR} > 1$) present in the cell;
- The simple sum of the frequency in deposit buffers of all lithologies present in the cell.
- For each commodity (i.e., dataset) in the scope of the project, these five scoring approaches were statistically tested, to assess their performance and identify the most accurate. To do so, we performed the followings tasks for each dataset:
 - 100 CBA prospectivity test maps were calculated;
 - For each one of them, 50% of the dataset (randomly selected) was used as training set and the remaining 50% was used as controlling set;
 - For each test map, a ROC (Receiver Operating characteristic) curve was calculated with the controlling set and its performance was measured with the AUC (Area Under Curve) indicator;
 - For each scoring method, an average AUC value and standard deviation were calculated, that allowed to measure its performance per dataset.

For each dataset, scoring methods were evaluated on their average AUC value. The results of these statistical tests for the lithium, cobalt and natural graphite datasets are synthesized in the Figure 5 below. They show that the “simple product of FR” scoring technique is largely underperforming for all 3 datasets. This result is not really a surprise as the product of all frequency ratios is likely to produce a high variability of results, which could hamper accuracy and reliability. It also shows that the “simple sum of frequencies in deposit buffers” scoring technique is slightly underperforming for all 3 datasets. Finally, the statistical test results show that the “simple sum of FR”, the “sum of favourable FR” and the “product of favourable FR” scoring techniques provide results of quite similar accuracy, with slightly better results for the “simple sum of FR” scoring technique for all 3 datasets. As a consequence, we have used this scoring technique for the CBA prospectivity maps of lithium, cobalt and natural graphite.

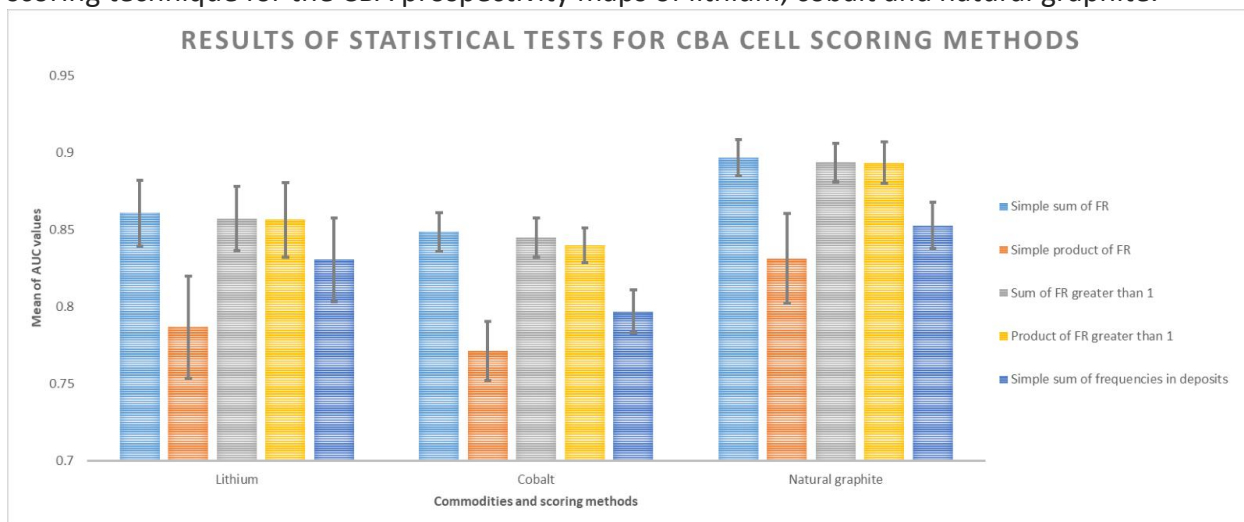


Figure 14 results of the statistical tests of CBA cell scoring methods for the Li, Co and natural graphite datasets.

An example of a favourability map can be seen below in Fig.14.

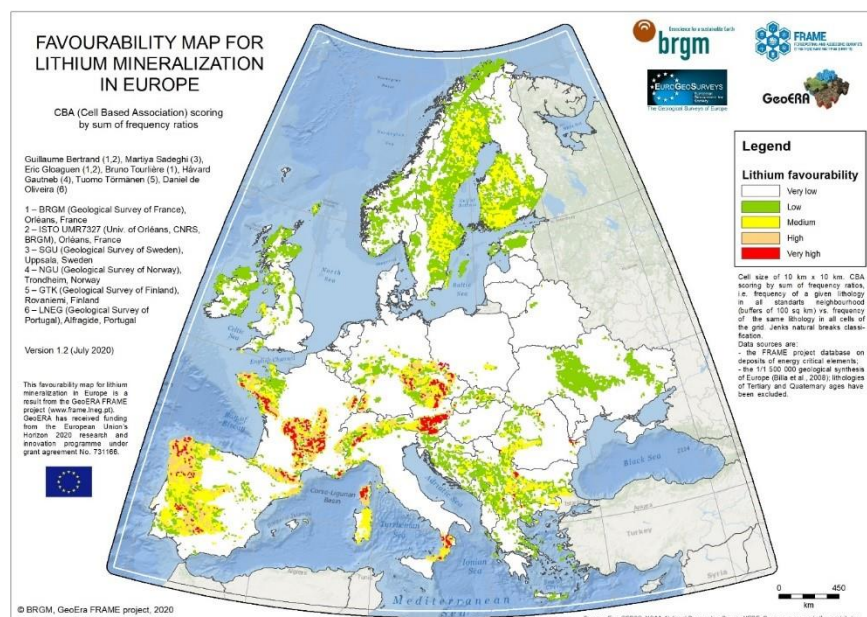


Figure 15 - CBA favourability map for lithium. Dataset of energy critical elements compiled by the WP5 of the FRAME project.

Concluding remarks:

Prospectivity maps are based on geological features, so they provide a “geological favorability”. They do not consider economical aspects, and they do not presume the economic viability of any future discovery. Still, they highlight areas that are favorable for the discovery of new occurrences and hopefully new deposits.

They highlight some areas where deposits are already known. That of course is not a novel result, but it somewhat confirms the reliability of the mineral prospectivity mapping approach. These favourable regions need anyway to be carefully scrutinized as it might appear that prospective area were given too little interest in the past.

In addition, these maps highlight favorable areas where no occurrences are reported in the input deposit datasets, and that is in our opinion an interesting output of this work. These prospective areas should be given a closer focus and studied in more details in further studies, eventually combining more diverse datasets, to confirm their potential. As such, the present study opens new doors for future exploration works.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Align INSPIRE compliant African ECRM DB with	01/01/2023	30/09/2023	BRGM (with help from LNEG)
Action 2: Produce predictability maps	01/01/2023	31/05/2024	BRGM

3. Task 1.3 Pan-African inventory of existing ore processing and refining capacities

Start date: M8 (January 2023) End date: M16 (September 2023)

Task Leaders: Daniel de Oliveira, LNEG

Contributors: Jürgen Vasters, (BGR); Maite Le Gleuher, (BRGM); Gaetan Lefebvre, (BRGM); Kathy Bru, (BRGM)

The aim of this task is to, where possible, extract the inventory of industrial mineral processing units operating in Africa, stored in conveniently structured datasets and, if possible, with economic information on the involved markets.

Sub objectives are:

1. Each mineral processing unit will be characterized in detail, taking into consideration the adopted technological solutions and its potential for flexibility concerning the processing of different ores of a certain type;
2. Depending on the geographic proximity and regional metallogeny, the possibilities of using existing industrial units to carry out preliminary pilot tests, enabling the development of new processing projects, will be evaluated;
3. Production developments of the artisanal and small-scale mining sector (see below), as an indicator of resources and supply potential, will mainly be outlined at the country level, based on information from national reports and other sources, including from donors engaged in development cooperation projects;
4. This mapping of the existing facilities will be analysed in a long-term perspective, considering the needs, gaps, opportunities to replace the existing assets by refurbished or new clean assets in strict respect to the Sustainable development goals.

The task 1.3 will include ASM country profiles as well, for more or less 20 African countries (every country where we identified ECRM production via ASM will be included; it will include some of the AfricaMaVal case study countries and some countries beyond it, such as Nigeria or Ethiopia). Note that due to limited data availability and accuracy individual ‘projects’ or sites usually cannot be evaluated in detail in the ASM sector. The ASM country profiles shall therefore refer to national developments instead.

Country profiles should cover the following points (draft table of content):

1. Short country ASM background
2. Brief overview on ASM sector in general: including both ECRM and non-ECRM
3. ECRM deposit types amenable to ASM exploitation
4. ASM ECRM mining and processing techniques
5. ASM ECRM production patterns (statistics, estimates etc. – whatever will be available)
6. Potential future ASM ECRM production opportunities.

Note that available data will be used to the extent possible but part of the above information may not be available for each country.

The country profiles shall be written as a text (1-4 pages each), supported with (anecdotal) data, where available. In case there is sufficient data for ECRM ASM production or export statistics, we shall additionally include tables and/or figures. Importantly, this task is linked to Task 7.5 in WP7.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: DB and literature research	01/01/2023	30/09/2023	(LNEG)/ (BRGM), (BGR)
Action 2: Populating the DB	01/01/2023	30/09/2023	(LNEG)/ (BRGM), (BGR)
Action 3: writing the country profiles short reports	01/11/2022	30/09/2023	(BGR)

4. Deliverables

Number	Title	Due Date	Responsible
D1.1	INSPIRE compliant data set of Pan-African inventory of the known CRM deposits	31/01/2023	Daniel de Oliveira/Carla Fortes - LNEG
D1.2	Mineral exploration potential based on favourability maps	31/05/2024	Guillaume Bertrand - BRGM
D1.3	Pan-African inventory of existing ore processing and refining capacities	30/09/2023	Daniel de Oliveira - LNEG
D1.4	Country profiles of artisanal and small-scale ECRM mine production and processing developments	30/09/2023	Philip Schütte / Jürgen Vasters - BGR

5. Milestones of WP1

Number	Title	Verification mean	Due Date	Responsible
MS1	INSPIRE compliant data set of pan-African inventory of the known CRM deposits	Handing in of Deliverable D1.1	31/01/2023	Daniel de Oliveira/Carla Fortes - LNEG
MS2	Mineral exploration potential based on prospectivity maps	Handing in of Deliverable D1.2	30/09/2023	Guillaume Bertrand - BRGM
MS3	Pan-African inventory of existing ore processing and refining capacities	Handing in of Deliverable D1.3	30/09/2023	Daniel de Oliveira - LNEG
MS4	Country profiles of artisanal and small-scale CRM mine production and processing developments	Handing in of Deliverable D1.4	30/09/2023	Philip Schütte - BGR

6. Interaction with other WPs

Number	Interaction description	Responsible
WP2	Task 2.2 Identify and assess existing value chain projects of ECRM's	Nikolaos Christou/Sodhie Naicker - DMT
WP5	Task 5.1 Mapping African Clusters	Frank Mugenyi - MADI/Eberhard Falck - INTRAW/Vitor Correia - INTRAW

WP7	Task 7.5 Evaluation of responsible investment for artisanal and small-scale mining	Holger Grundel (Levin Sources)
WP8	Task 8.2 Awareness raising campaigns	Joy Cremesty (LGI)
WP9 – CS	Task 9.3 Country Case studies: Feed the partners with WP1 database and potential maps	C. Zammit (BRGM)

7. Risks of WP1

Contractual risks (number, description, risk-mitigation), probability (L=low; M=medium, H=high) that the risk occurs and impact (L=low; M=medium, H=high) if the risk occurs. Other risks (not in GA) can be added so they can be followed during the project. Risk mitigation: P=preventive actions / C=contingency actions.

Number	Risk description	Risk mitigation	Proba	Impact
1	Pandemic risks, such as SARS-CoV-2 coronavirus (Covid-19)	Anticipating countermeasure to ensure the work continuity such as teleworking or virtual meeting. A six-month period is also planned at the end of the project for security	H	M
2	Political risks such as an unstable political situation, cabinet shuffle or attempted putsch	A continuous adaptation will be needed through proposals of the Management Committee to the EU	L	H
3	Corruption leading to fund diversion	Ensuring a full transparency of any fund used	L	L
4	Difficulties of one partner during the project execution	The case will be anticipated in the Grant and in the Consortium agreement, with reinforced support from the coordination	L	M

3.2. Description of WP2 “The ECRMs value chain analysis” activities

Start date: M1 (June 2022); End date: M34 (March 2025)

Work Package Leader- co-Leader: Nikolaos Christou (DMT), Sodhie Naicker (DMT KB)

1. Task 2.1 Gather information source grid and acquisition time

Start date: M1 (June 2022) End date: M6 (November 2022)

Task Leaders: Nikolaos Christou, Lukas Förster (DMT GmbH & Co. KG), Sodhie Naicker, Hudson Mtegha, Herman Cornelissen (DMT Kai Batla)

Contributors: Leon Riedel (Levin Sources), Mathias Schluep, Robin Gilli, Shahrzad Manoochehri (WRFA)

The aim of the task is to cover the compilation of reliable data on primary and secondary ECRM value chains for the subsequent identification of related opportunities. This will be achieved by screening existing databases as well as the acquisition of additional information where necessary. The team will utilize data from public domain sources, internal project databases, information generated by the partners in the other work packages and survey data acquired directly from the ECRM stakeholders. Concerning the latter, the project will employ only anonymized information, which is voluntarily disclosed from the stakeholders to the public.

For that purpose, an information collection sheet in the form of a checklist will be compiled, reflecting indirectly the quantitative and qualitative screening criteria for the ECRM value chains. Quantitative criteria will include facts like the project name, locations, main commodity, byproducts, capacities, perspectives, infrastructure, ownership, financial factors, etc. Qualitative criteria will comprise the maturity level of each examined ECRM value chain project, the expected growth potential, compliance issues etc. For a targeted gathering of information, the information collection sheet will be distributed to all respective partners for revision and amendments.

Further to the identification of primary ECRM value chains, the aggregated data will aid the identification of active ECRM recycling projects and opportunities considering the inclusion of the informal sector. To enhance the knowledge and inclusion of recycling and the informal sector in the investigation, two related online workshops have been planned. The first workshop with BGR/Levin Sources will determine the characteristics of the ASSM sector for a proper alignment of our approach towards ASSM value chains. Subsequently, WRFA will organize an internal workshop with all the project partners to define the scope of secondary raw materials ECRM value chains. This workshop will additionally discuss the requirements and approaches for inclusive recycling, where shared values are created for all actors in the waste management cycle. It will specifically cover the needs for integration of the informal sector in secondary ECRM value chains.

As a last step, it will perform a literature review with a focus on ESG performance of ECRM value chain stakeholders (required for Task 2.2).

Task 2.1 is carried out in the framework of **Objective 1.2. “Identify, assess and quantify opportunities and formulate recommendations”** and is a preparatory step for KPI 1.2 “10

Factsheets outlining EU-African ECRM value chain projects for each of the ten country case studies according to specific MVCA and recycling value.”

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Development of an information collection sheet to analyse identified ECRM projects	01/06/2022	31/07/2022	Herman Cornelissen (DMT Kai Batla)
Action 2: Screening of existing databases, additional information acquisition and compilation of reliable data on ECRM value chain projects	01/06/2022	30/11/2022	Herman Cornelissen (DMT Kai Batla)
Action 3: Workshop with Levin Sources to adapt the information collection sheet for ASM and to identify potential ASM projects	01/10/2022	31/10/2022	Leon Riedel (Levin Sources)
Action 4:			WRFA (Mathias Schluep)
a) Adopt the information collection sheet for secondary raw materials value chain projects	15/09/2022	30/09/2022	
b) Identify related recycling projects and opportunities	01/10/2022	15/10/2022	
c) Prepare for and organize an internal online workshop on the scope of value chains for secondary raw materials and inclusive recycling	01/10/2022	15/11/2022	

2. Task 2.2 Identify and assess existing African value chain projects of ECRMs

Start date: M8 (January 2023) End date: M16 (September 2023)

Task Leaders: Nikolaos Christou, Lukas Förster (DMT GmbH & Co. KG), Sodhie Naicker, Hudson Mtegha, Herman Cornelissen (DMT Kai Batla)

Contributors: Maite Le Gleuher, Gaetan Lefebvre, Daniel Monfort Climent (BRGM), Mathias Schluep, Robin Gilli, Shahrzad Manoochehri (WRFA)

Aim of this task is to analyse the acquired and systematized data for the identification of African ECRM value chain projects.

Operational ECRM value chain projects must provide stable output figures for at least three years. Junior ventures will be surveyed to identify prospective African ECRM value chain segments awaiting take-off investments for launch of production.

Individual schematic flowsheets will be developed based on the data acquired and the criteria established in task 2.1. The flowsheets will illustrate and allow further evaluation of the collected ECRM value chain projects according to main commodity extracted, potential of by-product extraction, requirements and optimization potential for individual flowsheet stages as well as selection of cases for the specific Material Value Chain Assessment (MVCA).

By integrating knowledge, infrastructures as well as backward and downstream links, these analyses will lead to the identification of business opportunities along the value chain. In case of

secondary raw materials and recycling, potential projects, and opportunities for inclusion of the informal sector will be analysed. This will include the assessment of the ESG performance levels and impacts, covering traceability and transparency.

Task 2.2 is carried out in the framework of **Objective 1.2. “Identify, assess and quantify opportunities and formulate recommendations”** and is the first step for **KPI 1.2 “10 Factsheets outlining EU-African ECRM value chain projects for each of the ten country case studies according to specific MVCA and recycling value.”**

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Analyse acquired ECRM value chain data according to project maturity	01/01/2023	30/09/2023	Herman Cornelissen (DMT Kai Batla)
Action 2: Development of individual flowsheet stages for specific Material Value Chain Assessment (MVCA)	01/01/2023	30/09/2023	Herman Cornelissen (DMT Kai Batla)
Action 3: Identification of business opportunities along the value chain	01/06/2022	30/09/2023	Herman Cornelissen (DMT Kai Batla)
Action 4: Considering the assessment of the ESG performance levels in business opportunities	01/01/2023	30/09/2023	Lukas Förster (DMT GmbH & Co. KG)

3. Task 2.3 Identify potential bottlenecks in the respective value chain segments

Start date: M20 (January 2024) End date: M26 (July 2024)

Task Leaders: Nikolaos Christou, Lukas Förster (DMT GmbH & Co. KG), Sodhie Naicker, Hudson Mtegha, Herman Cornelissen (DMT Kai Batla)

Contributors: Leon Riedel (Levin Sources), Mathias Schluep, Robin Gilli, Shahrzad Manoochehri (WRFA)

This task will identify bottlenecks along specific ECRM value chains, in knowledge, infrastructure and backward and downstream linkages.

Gaps in knowledge are defined as lack of information on material technical, infrastructure, economic, marketing, legal, environment, social and government factors impairing an objective assessment of particular ECRM value chain projects.

A wide range of infrastructure problems often renders ECRM value chain projects as unfeasible in Africa. Some typical examples expected to be encountered comprise the lack of transportation capacities (road, rail, sea), lack of energy networks, lack of communications, lack of specialized laboratories, and even lack of educational institutions capable of providing specialized personnel.

However, sometimes the feasibility problems concentrate around deficits in the backward and downstream linkages between authorities, producers, investors, and the markets to be indicated in the current investigation.

Further, task 2.3 will integrate the development of ESG indicators for primary and secondary raw materials of the analysed ECRM value chains to declare these materials as responsible, in interactions with WP 4.

The outcome of the task will rely on two workshops covering Task 2.2 and 2.3. One with BGR/Levin Sources to share and consider results of the ASSM country profiles with additional information on economic linkages. The second internal workshop will be organized by WRFA to share and discuss results of inclusive recycling country profiles as well as the opportunities for improving secondary raw materials value chains, by including additional information on economic linkages between the informal and formal recycling sector.

Task 2.3 is carried out in the framework of **Objective 1.2. “Identify, assess and quantify opportunities and formulate recommendations”** and is the second step for **KPI 1.2 “10 Factsheets outlining EU-African ECRM value chain projects for each of the ten country case studies according to specific MVCA and recycling value.”**

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Identify bottlenecks along specific ECRM value chains	01/01/2024	31/07/2024	Herman Cornelissen (DMT Kai Batla)
Action 2: Development of ESG indicators for primary and especially secondary raw materials	01/01/2024	31/07/2024	Lukas Förster (DMT GmbH & Co. KG)
Action 3: Workshop to consider ASSM country profiles with economic linkages	01/04/2024	30/04/2024	Leon Riedel (Levin Sources)
Action 4: Prepare for and organize an internal workshop presenting and discussing the result of Task 2.2 and 2.3 on the secondary raw materials country profiles	01/01/2024	31/07/2024	Mathias Schluep (WRFA)

4. Task 2.4 Identify, assess and quantify opportunities and recommendations

Start date: M26 (July 2024) End date: M34 (March 2025)

Task Leaders: Nikolaos Christou, Lukas Förster (DMT GmbH & Co. KG), Sodhie Naicker, Hudson Mtegha, Herman Cornelissen (DMT Kai Batla)

Contributors: Maite Le Gleuher, Gaetan Lefebvre, Daniel Monfort Climent (BRGM), Leon Riedel (Levin Sources), Mathias Schluep, Robin Gilli, Shahrzad Manoochehri (WRFA)

The aim of the task is to identify, assess and quantify new opportunities and issue respective recommendations.

Ideally, new opportunities should add value at project, commodity, and community level. They may arise by enhancing existing value chains or as completely new approaches filling in the gaps of existing ECRM value chains and linkages. Further, the analysis will identify Joint-Venture opportunities for EU and African entrepreneurs. A link with WP7 will identify opportunities for EU-African integrated value chains.

Recommendations to foster ESG impact will be formulated covering the non-financial risks and opportunities inherent to the day-to-day operation of the ECRM value chains. All three pillars will be taken into account indicating potential enhancements of the environmental, social and governance level.

A workshop with BGR/Levin Sources will aim at sharing recommendations for investment opportunities in ASSM sector. A second workshop on inclusive recycling will aim at sharing

recommendations regarding investment opportunities in the interface between informal and formal sector.

Task 2.3 is carried out in the framework of **Objective 1.3. “Promote responsible and sustainable mining practice in agreement with ESG goals”** related to **KPI 1.3: “Provide “Best in Africa” factsheets with ESG criteria benchmarking for each of the ten country case studies.”**

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Identify, assess and quantify new opportunities adding value to existing value chains, new opportunities, and potential JV	01/07/2024	31/03/2025	Herman Cornelissen (DMT Kai Batla)
Action 2: Development of recommendations to foster ESG impact of identified ECRM value chain projects	01/07/2024	31/03/2025	Lukas Förster (DMT GmbH & Co. KG)
Action 3: Workshop on sharing recommendations for investment opportunities in ASSM sector	01/11/2024	30/11/2024	Leon Riedel (Levin Sources)
Action 4: Prepare for and organize an internal workshop on inclusive recycling regarding recommendations for investment opportunities in the interface between informal and formal sector	01/07/2024	31/03/2025	Mathias Schluep (WRFA)

5. Deliverables

Number	Title	Due Date	Responsible
D2.1	Project fact sheets and flow analyses outlining African ECRM value chain projects-Template	30/11/2022	DMT Kai Batla
D2.2	Project fact sheets and flow analyses outlining African ECRM value chain projects	31/01/2024	DMT Kai Batla
D2.3	Analysis of potential bottlenecks for each ECRM value chain, including identification of investment opportunities	31/07/2024	DMT Kai Batla
D2.4	Database and report of opportunities in the current value chains and Joint-Venture accompanied by ESG impact assessment and recommendations	27/02/2025	DMT GmbH & Co. KG

6. Milestones of WP2

Number	Title	Verification means	Due Date	Responsible
	No milestones defined for WP 2			

7. Interaction with other WPs

Number	Interaction description	Responsible
WP1	Task 2.1 & 2.2: Cooperation with BGR (WP 7) regarding the identification of ECRM selected projects	DMT Kai Batla

WP2	Task 2.2 & 2.3 & 2.4: Cooperation and alignment with WP 4 and WP DMT GmbH & Co. KG 7 regarding ESG performance assessments and recommendations
WP3	Task 2.4: Cooperation with BGR (WP 7) to identify opportunities for DMT Kai Batla EU-African integrated value chains
WP6	Task 2.3 and 2.4: Provide input for WP6 (Tasks 6.2, 6.3 and 6.4) for WRFA developing a strategy for integration for EU-Africa value chains
WP7	All the tasks: Provide inputs for WP9-CS to feed the 10 Country Case DMT GmbH & Co. KG studies before August 2023 DMT Kai Batla

8. Risks of WP2

Number	Risk description	Risk mitigation	Proba	Impact
1	Pandemic risks, such as SARS-CoV-2 coronavirus (Covid-19)	Anticipating countermeasures to ensure the work continuity such as teleworking or virtual meeting. A six-month period is also planned at the end of the project for security	H	M
2	Political risks such as an unstable political situation, cabinet shuffle or attempted putsch	A continuous adaptation will be needed through proposals of the Management Committee to the EU	L	H
3	Corruption leading to fund diversion	Ensuring full transparency of any fund used	L	L
4	Difficulties of one partner during the project execution	The case will be anticipated in the Grant and in the Consortium agreement, with reinforced support from the coordination	L	M
5	Insufficient stakeholder engagement at national or local level	Massive awareness raising campaigns will widely promote and strengthen the visibility and the influence of AfricaMaVal and thus highlight several attractive investment opportunities	M	M
6	Lack of access to sufficient or publicly available data related to projects and opportunities (specifically for ASM and informal sector)	Close collaboration with other WPs to identify and engage with key local stakeholders who can support with collecting relevant information.	L	L

3.3. Description of WP3 “Financing instruments and funding requirements activities”

Start date: M1 (June 2022); End date: M33 (February 2025)

Work Package Leader: Dr Andor Lips (HCF International Advisers Ltd (HCF))

Work Package Co-Leader: Eloise Nederveen (HCF)

1. Task 3.1 Finance metrics for a RM project in Africa

Start date: M1 (June 2022) End date: M6 (November 2022)

Task Leader: Dr Andor Lips, Eloise Nederveen, Christos Kolorizos, Oisín McEvoy (HCF)

Contributors: Nikolaos Christou (DMT GmbH & Co KG, Germany (DMT)) and Philip Schütte (Bundesanstalt für Geowissenschaften und Rohstoffe, Germany (BGR))

The aim of this task is to provide an overview of how an investor, debt provider, financier approaches and assesses an “investment opportunity”.

This task will cover, amongst others, what is assessed in a project and how the assessment takes place, i.e. the due diligence process.

There will be two dimensions to this review:

- Identification of areas of due diligence by lenders / investors including but not limited to geology, mining, processing, infrastructure, execution, market, Environmental, Social and Governance as well as financial.
- Description of the due diligence process undertaken by an investor/lender in assessing an opportunity.

How one then reviews that due diligence and goes on to categorizing it as an “investment opportunity” will depend on many factors, including the identity and appetite of each investor / financier, which will form part of the Liquidity Review and leads logically to Tasks 3.2-3.4.

The scope will be an ECRM project in Africa and as such will not be focussed on a country in particular. Nor will it be focused on a specific commodity or investor / lender group. As such, the main sources of information will be:

1. Expertise of the HCF team in advising mining project in Africa
2. Desktop research on project finance 101.

Task 3.1 will be concluded with a report, the “Finance Matrix Report”, which will become part of the future D3.1 Liquidity Action Plan.

The Finance Matrix Report does not require further approval as it is not a formal deliverable.

This Finance Matrix Report will however allow to prepare for work involved in WP 7’s identification of investment opportunities as it will aim to define what questions will arise in the review of a project by an investor/lender. WP3 (Task 3.1) aims to submit a draft of the Finance Matrix Report to the leader of WP 7 to ensure they review it and provide feedback to enable them to use this document for their own work.

Workshop Materials: The aim is for WP 7 to be in a position to use this report to confirm these opportunities. As such, we will aim to organise an internal workshop providing an overview of how one assesses a project from an investor / lender standpoint. We will therefore also prepare

workshop presentation materials to be used in that context. Timing / Location to be confirmed, but the upcoming Mining Indaba conference (February 2023) and anticipated workshop of BGR is an identified option.

Due Diligence Questionnaire: To summarize the report and to provide a practical tool for assessing an investment opportunity, the report will include a “due diligence questionnaire” listing significant questions one should raise when reviewing a project as a potential investment opportunity. The questionnaire will follow the various due diligence areas described in the report (See Content).

Financial Assessment Tools: Lenders and investors have very specific “financial ratios” which they will look to calculate to assess the financial viability of a project i.e. the project may fit their investment strategy but the project’s projected cashflows may not meet debt service obligations or investment threshold ratios. These ratios apply across the various groups of investors and financiers, with some placing more emphasis on one set of measures and vice versa. As such, we will aim to provide as part of the report, a list of financial ratios, their calculation methodology and their objective, which is essential in understanding how a lender / investor will ultimately decide on a project.

Contribution by DMT (1PM) and BGR (1PM)

Please see earlier in relation to BGR’s involvement on this task as they will review and provide feedback on the report to ensure it can assist them in their assessment of investment opportunities.

Equally for DMT, their experience and expertise will be instrumental in providing further input to the risk review and due diligence requirements from a technical and E&S standpoint, and also allowing to align with the future task 3.5.

Action Plan

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Kick off meeting with WP3 contributors to ensure collaboration. Discuss next steps	16/09/2022	16/09/2022	HCF
Action 2: First draft of Finance Matrix Report	01/06/2022	30/09/2022	HCF
Action 3: Second draft of Finance Matrix Report	01/10/2022	31/10/2022	HCF
Action 4: Communicate draft Finance Matrix Report to BGR as WP 7 leader and receive feedback	01/10/2022	15/11/2022	HCF / BGR
Action 5: Communicate draft Finance Matrix Report to DMT and receive feedback / input	01/10/2022	15/11/2022	HCF / DMT
Action 6: Final Finance Matrix Report	01/10/2022	30/11/2022	HCF

Risks

A key risk of this exercise is that of a mismanagement of expectations:

- the Finance Matrix Report will not identify investment opportunities (this is the objective of WP 7)
- the Finance Matrix report will not identify specific risks linked to specific commodities or countries (this is the objective of WP 9 and Task 3.4)

2. Task 3.2 Liquidity Review

Start date: M6 (December 2022) End date: M12 (May 2023)

Task Leader: Dr Andor Lips, Eloise Nederveen, Christos Kolorizos, Oisín McEvoy (HCF)

Contributors: n/a

The aim of this task is to set out an action plan to provide a comprehensive overview of the sources of financing for raw materials projects in Africa in general and in the countries covered by the case studies in further detail.

The Liquidity Action Plan will aim to cover the following questions:

- Who do we approach, how and when?
- What questions do we ask? The results from task 3.1 will help us formulate these questions, to enable us to have a solid understanding of an entity's:
 - Liquidity;
 - Appetite for ECRM projects in Africa and in the countries covered by the case studies;
 - Specific terms and conditions;
 - Due diligence requirements;
 - Approvals process.
- How do we communicate our findings?

For this task, we will rely on our expertise in the sector as, given our precedents in the mining sector in Africa, we know most investors and financiers involved in Africa.

We expect however the target list of lenders and investors to evolve as we progress through Task 3.3:

- The financing parties we speak to may give us additional names
- We may not be aware of the smaller / national / domestic initiatives with smaller ticket size and we will look to fill that gap with MADi on the case studies
- In a rapidly evolving environment, triggered by supply pressures on ECRMs, shipping challenges resulting from COVID 19 and the war in Ukraine, the group of investors or financiers may change until we complete on Task 3.4

The Liquidity Action Plan will include:

- Our objective for Task 3.3 and Task 3.4
- An overview of the various sources of liquidity to approach and why as well as what we expect to focus on during our meeting / call / information gathering phase
- A detailed timetable, taking into account the various conferences and potential workshops, the location of these entities, on how to approach / obtain relevant information from these institutions
- Questionnaires targeting the various groups of lenders / investors including format and content. This questionnaire should also include certain questions specific to the countries covered by the case studies
- Preliminary outline of our deliverables D3.2 and D3.3

- Short presentation on AfricaMaVal, which will be sent to the various entities together with the questionnaire, to explain our approach

The aim of this deliverable is to detail the actions to perform as part of Task 3.2 and Task 3.3. The questionnaires will support the data gathering, which in turn will feed into D3.2 and D3.3. As such, it will be essential to confirm that the Questionnaires will meet the objectives for D3.2 and D3.3.

WP 9: In particular, for D3.3 (case study), we will look to understand with BRGM their expectations in terms of content and timeline to ensure we deliver adequate information to feed the case studies (Noting however, the timing issues to be resolved as the case studies are due before the beginning of Task 3.4)

WP 6 / WP 7: We recognize as well that this exercise aims to introduce AfricaMaVal to those entities to ensure (i) they are aware of the European Commission's objectives and the work being done on Investment Opportunities (WP7) and (ii) that there is on-going dialogue during and post the completion of the AfricaMaVal project. We will thus aim to submit the short presentation on AfricaMaVal to EIT Raw Materials (Lead on WP 6) and BGR (Lead on WP 7) for their review.

WP 5: We will also aim to provide a high-level draft of the format of our deliverable for D3.3 to MADi to understand what they require in the context of WP 5 and the EU-Africa RM Networking Platform, and ensure the Questionnaires cover it.

Should we need it we may ask for the assistance of MADi and AWIMA to provide the relevant introduction to some of these institutions (also with help from DMT, EIT Raw Materials etc).

Contribution

None

As part of their future contribution on Task 3.3, we will deliver the list of targets and questionnaires to MADi so as to confirm that we have approached the relevant entities that needed to be approached in the context of smaller or more local entities focussed on artisanal and small scale mining activities.

Action Plan

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: List of entities to be approached	01/12/2022	31/01/2023	HCF
Action 2: Draft Questionnaires	01/12/2022	31/03/2023	HCF
Action 3: Liquidity Action Plan template	01/12/2022	31/01/2023	HCF
Action 4: Gather contact details and check with MADi if we are missing any relevant entity	28/02/2023	31/03/2023	HCF
Action 5: Liquidity Action Plan first draft	28/02/2023	31/03/2023	HCF
Action 6: Submit presentation to EIT Raw Materials / BGR	01/04/2023	30/04/2023	HCF
Action 7: Submit high level outline of D3.3 Report to BRGM	01/04/2023	30/04/2023	HCF
Action 8: Submit high level outline of D3.3 Report to MADi	01/04/2023	30/04/2023	HCF
Action 9: Liquidity Action Plan final	01/04/2023	30/04/2023	HCF

Action 10: Submission to Coordinator	01/05/2023	31/05/2023	HCF
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Risks

It will be essential to ensure the questionnaire is detailed enough to gather the information we require. Yet at the same time it is key to be as concise as possible to avoid putting anyone off providing such information. As a result we may sometimes organise calls or other meetings instead of (not in addition to) obtaining feedback on questionnaires.

3. Task 3.3 Mapping of Financing and Investment Instruments for Raw Materials Projects in Africa

Start date: M7 (December 2022) End date: M30 (November 2024)

Task Leader: Dr Andor Lips, Eloise Nederveen, Christos Kolorizos, Oisín McEvoy (HCF)

The aim of this task is to provide a comprehensive overview of pockets of liquidity available for Critical Raw Materials Projects in Africa. The Mapping Report will cover the topics introduced in the Liquidity Action Plan.

To achieve this, we will aim to fulfil the Liquidity Action Plan developed under Task 3.2 and gather relevant information from investors and financiers to further define their investment / financing targets, risk appetite, due diligence requirements, standard financing/investment instruments and approval processes.

We will aim to submit questionnaires to these entities and organise calls or meetings to introduce AfricaMaVal. The support used for the submission of these questionnaires will be decided with the Liquidity Action Plan.

The Mapping Report will provide as a minimum:

- A summary of our meetings, calls and email exchanges;
- Feedback on the outcome of Task 3.3 in terms of expectations and whether these were met; and
- Key findings summarizing the responses received.

WP 5: The aim of the Mapping Report is to provide a map of all investors and lenders, which may have appetite in participating in an investment opportunity in the ECRM sector in Africa. The Mapping Report should help MADi in the context of WP 5 and potentially in the building of the EU-Africa RM Networking Platform.

The Mapping Report should also help the European Commission in understanding the expectations of investors and lenders to define future investment opportunities as well as who to approach for any specific African ECRM projects. As such, we would aim to organize a workshop or dialogue event with the European Commission (possibly together with EIT Raw Materials) to:

- Present how investors and lenders assess a project and introduce key financial metrics; and
- Summarize key findings by pockets of liquidity.

The workshop may include presentations by two or three entities who would introduce their expertise, appetite, process and requirements.

We note that the European Commission is also evolving its understanding (and position) about funding and financial support to develop resilient CRM supply-chains. We aim to follow this evolution closely and will try to contribute to any dialogue where deemed appropriate.

Contribution

None

Action Plan

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Template for reporting	01/12/2022	31/05/2023	HCF
Action 2: Submit template to MADI / BRGM and LGI for review	01/06/2023	31/07/2023	HCF
Action 3: Data gathering via conferences, meetings etc	01/06/2023	30/06/2024	HCF
Action 4: First draft of Mapping Report	01/06/2024	30/08/2024	HCF
Action 5: Second draft of Mapping Report	01/09/2024	30/09/2024	HCF
Action 6: Final Mapping Report	01/10/2024	31/10/2024	HCF
Action 7: Submission to Coordinator	01/11/2024	30/11/2024	HCF
Action 8: Workshop with European Commission (to be planned with AfricaMaVal Partners)	tbc	tbc	HCF

Risks

As this is an exercise, which requires feedback from various investors and lenders, it is likely that we may not be able to meet / call as planned or obtain all of the information we would seek to get from these entities.

4. Task 3.4 Mapping of Financing and Investment Instruments for key projects in the countries covered by the project

Start date: M24 (May 2024) End date: M33 (February 2025)

Task Leader: Dr Andor Lips, Eloise Nederveen, Christos Kolorizos, Oisín McEvoy (HCF)

Contributors: Nikolaos Christou (DMT), Philip Schütte (BGR) and Frank Mugenyi (Minerals Africa Development Institution Limited, Uganda (MADI))

The aim of this task is *to refine the research around pockets of liquidity to cover the country case studies.*

The aim is to cover:

- Financing precedents (if any) in the country in question, using, to the extent possible, three recent examples per country:

- We will look to schedule calls with the law firms and lenders involved to understand key challenges linked to the country (rather than the project itself).
- Country risk:
 - We will aim to assess lenders/investors' perception of country risk, through financing precedents as well as via the Questionnaires.
 - We will assess any financial risk linked to a potential investment into / financing of a project including but not limited to the ability to convert, transfer funds, establish offshore accounts etc.
 - We will build on the chapters on mining, supply chains, E&S, country review to be drafted in the context of WP 9 to identify any potential issue that may impact on the attractiveness of the country for investors and lenders.
- Pockets of liquidity:
 - We will, on the back of our Questionnaires, provide a list of potential investors and lenders who are “open to business” in the country in question, subject to due diligence on the specifics of the project.
- Artisanal and small scale projects:
 - On the back of the information provided via WP 1 (refer to D1.4 Country profiles of artisanal and small-scale ECRM mine production and processing developments (BGR, M16)), MADI will assist HCF in summarizing / defining the risks related to all artisanal and small scale projects, as well as the pockets of liquidity that may be available in the country in question

The preparation of these Mapping Report Case Studies will rely on:

- Calls with the parties involved on the financing precedents;
- Questionnaires;
- Potentially calls with other stakeholders (auditors, law firms, national development agencies, etc.) to understand whether there are any issues to consider when looking at an investment / financing into a specific country; and
- Chapters on mining, supply chains, E&S, country review to be drafted in the context of WP9.

These constitute “case studies” which will be added to the Mapping Report as appendices (the “Mapping Report Case Studies”).

WP 9: We will use the high-level outline of D3.3, which we will have discussed with MADI/BRGM as part of Task 3.2 and will prepare a template for further review by MADI/BRGM/LGI as part of their review work.

Same as for Task 3.3, the aim of the Mapping Report is to provide a map of all investors and lenders, which may have appetite in participating in an investment opportunity in the ECRM sector in Africa. The Mapping Report Case Studies should help MADI in the context of WP5 and potentially in the building of the EU-Africa RM Networking Platform.

The Mapping Report Case Studies should be used for MADI/BRGM/BGR/DMT/LNEG to incorporate key findings in their case studies on WP 9. However, the timing currently does not fit the deadlines for these case studies. To be re-visited. We assume there is a communication strategy underlying the case studies on WP 9 and will follow that strategy.

BGR (1PM): we may rely on the information gathered by BGR in the following context:

- WP 7, should they cover the country as part of their 100 investment opportunities, to provide specific information on the country (infrastructure as part of Task 7.3, national regulatory framework as part of Task 7.4, ASSM map as part of Task 7.5)
- WP 1, and specifically D1.4 Country profiles of artisanal and small-scale ECRM mine production and processing developments (BGR, M16)

MADI (4PM): MADI's contribution to this Task 3.4 is in line with Task 5.3 (Strengthening African mining clusters with a view to build B2B relations) and in particular the “exploration of alternative financing models, e.g. micro-finance or crowdfunding with the case studies”

DMT (1PM): we may rely on the information gathered by BGR in the following context:

- WP 2, especially as it relates to ASSM country profiles (Task 2.3) and ASSM investment opportunities (Task 2.4)

Action Plan

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Template for reporting	01/05/2024	31/05/2024	HCF
Action 2: Submission and green light on reporting from LGI/BRGM for the purpose of the case studies (WP 9)	01/06/2024	30/06/2024	HCF
Action 3: Review of ASSM activities in country in question (MADI) as well as sources of liquidity	01/06/2024	30/09/2024	HCF/MADI
Action 4: Review of investment opportunities in country in question, ASSM map and BGR's understanding of the country context	01/06/2024	30/06/2024	HCF/BGR
Action 5: Review of ECRM value chain characteristics and opportunities in country in question with DMT especially in the context of ASM	01/06/2024	30/06/2024	HCF/DMT
Action 6: First draft of report	01/07/2024	31/10/2024	HCF
Action 7: Submission and green light on reporting from BGR / DMT / MADI	01/11/2024	30/11/2024	HCF/BGR/DMT/MADI
Action 8: Second draft of report	01/12/2024	31/12/2024	HCF
Action 9: Final report	01/01/2025	31/01/2025	HCF
Action 10: Submission to Coordinator	29/02/2025	29/02/2025	HCF

Risks

It will be essential to manage expectations:

- The Mapping Report Case Studies will reflect the then applicable views on “doing business” in the country in question. A lender may be keen to be involved then but a turn of events or a change in the internal strategy or country exposure limitations may affect their future involvement.
- The Mapping Report Case Studies rely on information provided by third parties, which may not be forthcoming or partial.

- The Mapping report Case Studies will present an overview on “doing business” in a specific country but will not be specific to a commodity or a project. Further due diligence will be required by an investor / lender to assess the attractiveness of a prospect.

The Mapping Report Case Studies rely on information provided by other Consortium Partners, the timing of which will be crucial. The level of detail will also be key.

5. Task 3.5 Sustainability benchmark

Start date: M24 (May 2024) End date: M33 (February 2025)

Task Leader: Nikolaos Christou, Lukas Förster (DMT)

Contributors: n/a

The aim of this task is to compile and assess the ESG indicators of AfricaMaVal mineral resource investment projects by the CERA 4in1 certification system for sustainable raw materials according to the EU Principles for Sustainable Raw Materials, the EU Taxonomy regulation.

The objective of the EU principles for sustainable raw materials is to align the understanding of sustainable raw materials extraction (from exploration to post-closure) and processing operations in the EU amongst Member States, and to define the general direction towards the 17 Sustainable Development Goals carved out in the United Nations 2030 Agenda. The EU principles for sustainable raw materials are applicable in the EU to the extraction and processing stages of non-energy raw materials and to the entire minerals value chains lifecycle from exploration to post-closure, as well as to the production of secondary raw materials from extractive waste streams such as waste rocks, processing wastes/tailings.

The EU's new Taxonomy Regulation is designed to support the transformation of the EU economy to meet its European Green Deal objectives, including the 2050 climate-neutrality target. As a classification tool, it seeks to provide clarity for companies, capital markets, and policy makers on which economic activities are sustainable. As a screening tool, it seeks to support investment flows into those activities. This article will explore what the Taxonomy is, how it works, and what its impact could be. At the core of the Taxonomy Regulation is the definition of a sustainable economic activity. This definition is based on two criteria. An activity must: (1) Contribute to at least one of six environmental objectives listed in the Taxonomy; and (2). Do no significant harm to any of the other objectives, while respecting basic human rights and labour standards. (3.) It complies with technical screening criteria to be developed by the EU. The six environmental objectives of the Taxonomy are: (1) climate change mitigation, (2) climate change adaptation, (3) sustainable use and protection of water and marine resources, (4) transition to a circular economy, (5) pollution prevention and control, and (6) protection and restoration of biodiversity and ecosystems. The Technical Screening Criteria define the specific requirements and thresholds for an activity to be considered as significantly contributing to a sustainability objective. These Technical Screening Criteria are currently being elaborated in secondary legislation called Delegated Acts.

The CERA 4in1 certification scheme is the first global scheme of its kind to universalise and standardise the evaluation of social, environmental and ethical practices across the raw materials value chain. CERA 4in1 uses sub-standards according to the value chain, allowing the certification

system to prove the sustainability of products along the entire value chain, from mineral exploration to the final product. CERA 4in1 is meant as a tool to extend their application to the identified projects of the AfricaMaVal project.

More specifically, the potential investment projects identified in WP 2 and WP 7 are initially benchmarked against the EU Principles for Sustainable Raw Materials and EU's new Taxonomy Regulation. The aim is to obtain a baseline status quo evaluation in relation to these regulations (Action 1). Additionally, the selected investment projects are evaluated (Action 2) in regards to the requirements of an international certification system (CERA 4in1). The goal is to obtaining a "second" baseline status quo assessment and a corresponding ranking (Action 3) in connection to the outcomes of WP 2. Thus, it is possible for the EU decision-makers to get a comparative picture of the project performance against the EU principles and an international certification as well (Deliverable).

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Compilation of ESG indicators of selected AfricaMaVal mineral resource investment projects according to EU Principles for Sustainable Raw Materials and EU's new Taxonomy Regulation.	01/05/2024	30/09/2024	DMT
Action 2: Assessment of ESG performance of selected AfricaMaVal mineral resource investment projects within the framework of the CERA 4in1 sustainability standard system	01/10/2024	31/12/2024	DMT
Action 3: Submission of a CERA 4in1 audit report to the coordinator on the sustainability score of selected AfricaMaVal investment projects	01/01/2025	29/02/2025	DMT

6. Deliverables

Number	Title	Due Date	Responsible
D3.1	Liquidity Action Plan	31/05/2023	Dr Andor Lips
D3.2	Funding Overview African Projects	30/11/2024	Dr Andor Lips
D3.3 (a)	Funding Overview Case Studies	27/02/2025	Dr Andor Lips
D3.3 (b)	CERA 4in1 ESG Performance scoring report	27/02/2025	Nikolaos Christou

7. Milestones of WP3

There are no milestones linked to WP3. Those are already embedded in the tasks and conclude with the submission / approval of the deliverables.

Number	Title	Verification mean	Due Date	Responsible
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a

8. Interaction with other WPs

Number	Interaction description	Responsible
WP 7	Task 3.1 - Finance metrics for a RM project in Africa To support : <ul style="list-style-type: none"> WP 7's work on defining investment opportunities (M33) 	HCF
WP5 WP82	Task 3.2 - Liquidity review To support : <ul style="list-style-type: none"> WP 5's work on EU-Africa RM Networking Platform (M36) WP 8's work on communication on AfricaMaVal 	HCF
WP5 WP7	Task 3.3 - Mapping of financing and investment instruments for ECRM projects in Africa To support : <ul style="list-style-type: none"> WP 7's work on defining investment opportunities (M33) WP 5's work on EU-Africa RM Networking Platform (M36) 	HCF
WP1 WP7 WP9 WP5	Task 3.4 - Mapping of financing and investment instruments for key projects in the countries covered by the project To support : <ul style="list-style-type: none"> WP 7's work on defining investment opportunities (M33) WP 9's work on case studies (M36) WP 5's work on EU-Africa RM Networking Platform (M36) To rely on: <ul style="list-style-type: none"> WP1's work on ASSM mapping WP 7's work on country infrastructure, regulatory framework and mapping WP 9's work on case studies 	HCF / MADI
WP2 WP75	Task 3.5 - Sustainability benchmark To review: <ul style="list-style-type: none"> Investment projects identified in WP 2 and WP 7 against EU Principles for Sustainable Raw Materials, EU's new Taxonomy Regulation and within the framework of the CERA 4in1 sustainability standard system 	DMT
WP9	Tasks 3.2 – 3.3 – 3.4 to support the country case studies	HCF

9. Risks of WP3

Contractual risks (number, description, risk-mitigation), probability (L=low; M=medium, H=high) that the risk occurs and impact (L=low; M=medium, H=high) if the risk occurs. Other risks (not in GA) can be added so they can be followed during the project. Risk mitigation: P=preventive actions / C=contingency actions.

Number	Risk description	Risk mitigation	Proba	Impact
1	Pandemic risks, such as SARS-CoV-2 coronavirus (Covid-19)	Anticipating countermeasure to ensure the work continuity such as teleworking or virtual meeting. A six-month period is also planned at the end of the project for security	H	M
2	Political risks such as an unstable political situation, cabinet shuffle or attempted putsch	A continuous adaptation will be needed through proposals of the Management Committee to the EU	L	H
3	Corruption leading to fund diversion	Ensuring a full transparency of any fund used	L	L
4	Difficulties of one partner during the project execution	The case will be anticipated in the Grant and in the Consortium agreement, with reinforced support from the coordination	L	M
5	Partners poorly experienced with European projects	Support by the experienced EU partners	L	L
6	Delays in obtaining the relevant meetings	Project consortium is well connected 12 months to achieve this task	L	L
7	Insufficiency of information provided	12 months to chase again	M	M
8	Financing criteria based on the “flavour of the moment” – the mood may change, with further emphasis placed on other criteria Current view of sources of liquidity – ever changing landscape No size fits all – no project is the same	n/a	n/a	n/a

3.4. Description of WP4 “Environmental, Social, and Governance improvement for the Raw Material Value Chain support “activities

Start date: M1 (June 2022); End date: M33 (February 2025)

Work Package Leader- co-Leader: Zenzi Natasha Awases (AWIMA)

1. Task 4.1 Assessment of social, environmental, and governance (ESG) challenges in mining across Africa

Start date: M1 (June 2022) End date: M12 (May 2023)

Task Leaders: Zenzi Awases (AWIMA)

Contributors: Eberhard Falck, Vitor Correia (INTRAW), Harmony Musiyarira & Mallikarjun Pillalamarry (NUST), Shahrzad Manoochehri, Robin Gilli (WRFA), Andiamasinoro Fenintsoa, Gaël Bellenfant (BRGM), Fabio Iannone (SSSA)

The aim of this task is to conduct a high and in-depth level review of the pertinent minerals policies, regulations, agreements, community engagement and consultation, land ownership and mineral rights, land-use and tenure, health and safety of workforces and communities, environmental management and regulation across the continent, distribution/attribution of royalties. A guidance document developed by the project team, describing what data and for what purpose are to be collected will aid local contacts in this task. This task will complement country-level assessments on investment climates by other organizations and other Work Packages.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Preparation for Data Collection <ul style="list-style-type: none"> • Identification of stakeholders as well country representatives (local contacts) to assist with data collection • Development of guidance document describing what data needs to be collected and for what purpose • Design of Data Collection Tool (survey) under the supervision of the external ethics advisor. 	01/06/2022	31/08/2022	AWIMA, INTRAW
Action 2: Country Desktop study <ul style="list-style-type: none"> • Identify and review of the ESG key criteria • Adoption of ESG criteria for the project • Review of country-specific ESG policies regulations, agreements and Identification of inherent weaknesses and strengths and explore 	01/07/2022	31/12/2022	AWIMA and all partners

opportunities for growth and improvement.			
<ul style="list-style-type: none"> Explore best or leading practices (in the country or regional) 			
Action 3: Data Collection	01/08/2022	31/03/2023	AWIMA
<ul style="list-style-type: none"> Implementation of data collection tool Country visits- The objective of the country visits is to conduct an in-depth analysis of the environmental context, the social conditions and the governance of the ECRM mining and recycling project, including the ASSM sector. Compilation of country report 			
Action 4: Report on mining regimes with respect to ESG objectives (D4.1)	01/01/2023	31/03/2023	AWIMA, NUST, INTRAW

2. Task 4.2 Enabling mining practices aligned to ESG goals

Start date: M1 (June 2022) End date: M30 (November 2024)

Task Leaders: Eleonora Annunziata, Fabio Iannone, Francesco Ghezzi (SSSA)

Contributors: Eberhard Falck & Vitor Correia (INTRAW), Harmony Musiyarira (NUST), Shahrzad Manoochehri & Robin Gilli (WRFA), Andiamasinoro Fenintsoa/Gaël Bellenfant (BRGM), Zenzi Natasha Awases (AWIMA)

This task will assess the specific Environmental, Social and Governance (ESG) challenges in the African countries concerned. ESG challenges include biodiversity loss, land degradation, landownership and compensation for displacement, local socio-economic changes due to the influx of outside workers, regional socio-economic development visions beyond the lifetime of the mines, gender distribution in the workforce and child labour in relation to local social structures and business models, and also in the informal mining sector (ASSM).

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Building an ESG framework that will guide the following primary data collection activities	01/06/2022	31/01/2023	AWIMA, INTRAW, SSSA, NUST, BRGM
<ul style="list-style-type: none"> Desk research on ESG challenges in the African mining sector (with a focus on target countries – see case studies), from scientific, grey literature and past projects' reports EU and AU repositories; 			

<ul style="list-style-type: none"> First contacts with case studies and communities. 			
<p>Action2: Refinement of the ESG framework to comprehensively embrace the challenges that most impact on African ECRM value chains and validation through country case studies;</p> <ul style="list-style-type: none"> First interviews with relevant actors that operate in the African mining sector (especially in the selected countries): individuals/organizations with a high-level perspective on the sector; Desk research updates 	01/02/2022	31/05/2023	AWIMA, SSSA, NUST, BRGM
<p>Action 3: Identification of ESG-compliant practices (with reference to the ESG framework), which are implemented in Euro-African raw materials supply chains.</p> <ul style="list-style-type: none"> Interviews with actors that operate in the African mining sector (especially in the country case studies), and with European intermediaries/companies which are involved in Euro-African raw materials supply chains (to be identified after the end of the first phase (M12)) Desk research updates 	01/06/2023	30/11/2023	AWIMA, INTRAW, SSSA, WRFA
<p>Action 4: Measurement of the level of implementation of ESG-compliant practices (with a selection of the best-performing ones)</p> <ul style="list-style-type: none"> Design and implementation of a survey to conduct with actors that operate in the African mining sector, and with European intermediaries/companies which are involved in Euro-African raw materials supply chains Desk research updates 	01/12/2023	31/05/2024	AWIMA, INTRAW, SSSA, WRFA, BRGM

Action 5: Development of the ‘Best in Africa’ factsheets 01/06/2024 30/11/2024 AWIMA, BRGM, SSSA

- Collection and systematization of all the information collected throughout the Task;
 - Categorisation of the identified best practices per each targeted country (see KPI 1.3)
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3. Task 4.3 Fostering best practice for responsible extraction

Start date: M18 (November 2023) End date: M33 (February 2025)

Task Leaders: Shahrzad Manoochehri & Robin Gilli & Mathias Schluep (WRFA)

Contributors: Zenzi Natasha Awases (AWIMA), Eberhard Falck & Vitor Correia (INTRAW), Harmony Musiyarira (NUST), Andiamasinoro Fenintsoa/ Gaël Bellenfant (BRGM), Eleonora Annunziata, Fabio Iannone, Francesco Ghezzi (SSSA)

The aim of this task is to make local communities resilient against the ESG challenges and promote and foster best practices and knowledge at local level. The task will specifically target those who are directly affected by the challenges such as the ASM sector. To achieve this objective, a two-pronged approach will be implemented. The bottom-up component will consist of in-country thematic short courses or practical training sessions (1 week) at community level. The curriculum and training materials will be developed with close collaboration and consultation with local partners and based on the needs and challenges identified in Task 4.2. The top-down approach aims to build and increase institutional capacity with long-lasting effects. The vision is to shift from capacity building at the individual level to capacity building at institutional level through a ‘Train the Trainer’ approach. To ensure the sustainability and long-lasting and multiplier effects of these trainings, plans and recommendations for embedding the training materials and curriculum in the existing vocational institutions and official educational systems, and establishment of an alumni programme, will be provided. The approach will be harmonized between different countries as much as possible but will need to be adapted to the necessary national specifications. In addition to the above ‘classical learning’ approach, based on a ‘student-teacher’ model and then having a hierarchical structure, trainings carried out in this task will also use ‘social learning’ approach. As a recall, social learning is this concept where there is no hierarchical structure anymore and where everybody learns from everybody regardless of his / her literacy or educational level. In this task, the goal of social learning process, carried out via additional training materials like role-playing game and permutation, theatre, etc. is twofold: (a) to obtain a shared understanding amongst players of the ESG issues collected in the previous tasks and (b) to make emerge, in a playful but still educational context, new/updated potential ESG issues and/or ESG-compliant practices via the observation of how players may react in “what-if” scenarios (e.g. change of mining regulations in the game). Classical and social learning will be, sometimes used separately, sometimes mixed on a case-by-case basis discussion with local stakeholders.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Develop (draft) curriculum and training materials for 'bottom-up' in country courses/trainings based on the ESG framework developed in task 4.1 and interview carried out in Task 4.2	01/11/2023	31/03/2024	WRFA, NUST, AWIMA, SSSA, BRGM
Action 2: Develop (draft) curriculum and training materials for 'top-down' in country courses/trainings	01/11/2023	31/03/2024	WRFA, NUST, AWIMA, SSSA, BRGM
Action 3: Identify participants and event logistics	01/11/2023	30/11/2024	WRFA, AWIMA, INTRAW, BRGM
Action 4: Organization of 10 training sessions in 10 pilot countries	01/03/2024	30/11/2024	WRFA, NUST, AWIMA, INTRAW, SSSA, BRGM
Action 5: Improve/Finalize curriculum materials (Deliverable 4.3)	01/05/2024	29/02/2025	WRFA, NUST, AWIMA, INTRAW, SSSA, BRGM
Action 6: Develop plans and recommendations and/or implementation of an Alumni Programme	01/11/2024	29/02/2025	WRFA, NUST, AWIMA, INTRAW, SSSA, BRGM

4. Task 4.4 Business models that correspond to the ESG challenges

Task Leaders: Eberhard Falck & Vitor Correia (INTRAW)

Contributors: Zenzi Natasha Awases (AWIMA), Shahrzad Manoochehri & Robin Gilli & Mathias Schluep (WRFA), Eleonora Annunziata, Fabio Iannone, Francesco Ghezzi (SSSA)

The aim of this task:

New business and operational models leading to less impacts and long-term legacies will be explored to respond to the ESG challenges posed by a mining sector that significantly relies on small-scale and artisanal mining. In Action 4.4.1 we will look at successful business models as used by ASMs and the supporting industry from various parts of the world for comparison/benchmarking, while in Action 4.4.2 we do this specifically for the African countries. In the subsequent action we will contextualise and compare them with a view to develop recommendations. Various types of business models will be investigated to ensure the individual's ownership of the undertaking (Action 4.4.3). The final output will be a guideline on how to integrate ESG goals into business models in various African countries (Action 4.4.4), which

will also be part of the recommendations in WP5 and WP7 (D4.4). These recommendations may actually go either way, as there are probably successful ASM business models in Africa, that could be adapted to other parts of the world. The socio-economic and socio-cultural contextualisation will be particularly important, as every country will be different and models that have been successful e.g. in S-America may not work in Africa or vice versa. It is also reasonable to assume that there are significant differences between African countries in this respect.

Actions		Start Date	Due Date	Responsible (organisation)
Action 1	Functional and process benchmarking of relevant business and operational models from all over the world	01/05/2023	30/11/2023	INTRAW
Action 2	Collate business and operational models as currently used across various African countries in particular as used in ASM	01/11/2023	31/03/2024	AWIMA
Action 3	Assess the capabilities of the business and operational models collated above with respect to their capability for environmental impact and mining legacy reduction	01/11/2023	31/05/2024	INTRAW
Action 4	Assess the capabilities of the business and operational models collated above with respect to their capability to shore up communities' support, enhance local governance and drive social improvements	01/03/2024	31/05/2024	SSSA
Action 5	Develop the guideline document on the basis of the work of the above actions	01/05/2024	30/11/2024	INTRAW

5. Deliverables

Number	Title	Due Date	Responsible
D4.1	Report on mining regimes with respect to ESG objectives	31/05/2023	AWIMA
D4.2	Guidelines for the implementation of a community-based ESG framework for ASSM and 'Best in Africa'-factsheets	30/11/2024	SSSA
D4.3	Curriculum material for in-country short courses	29/02/2025	WRFA
D4.4	Guideline on business models meeting ESG objectives	30/11/2024	INTRAW

6. Milestones of WP4

Number	Title	Verification means	Due Date	Responsible
MS1	Guidelines for Data Collection	Internal Review	31/07/2022	INTRAW
MS2	Design Data Collection Tool	Functionality and Applicability of the tool	31/08/2022	INTRAW
MS3	ESG Dashboard Design and Implementation	Functionality and Applicability of the Dashboard	31/05/2023	NUST

MS4	Interviews informants' identification and survey draft	Internal Review	31/07/2023	SSSA
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7. Interaction with other WPs

Number	Interaction description	Responsible
WP5	Shared data collection and comparison of intelligence	AWIMA & INTRAW
WP7	Feeding into the respective recommendations	AWIMA & INTRAW
WP2	Considering the assessment of the ESG performance levels in business opportunities	AWIMA
WP9	WP9-CS: Feeding the Country Case Studies with the field surveys and interviews report	AWIMA & INTRAW
WP6	Provide feedback to assist with Strategy workshop	AWIMA, WRFA, SSSA

8. Risks of WP4

Contractual risks (number, description, risk-mitigation), probability (L=low; M=medium, H=high) that the risk occurs and impact (L=low; M=medium, H=high) if the risk occurs. Other risks (not in GA) can be added so they can be followed during the project. Risk mitigation: P=preventive actions / C=contingency actions.

Number	Risk description	Risk mitigation	Proba	Impact
1	Pandemic risks, such as SARS-CoV-2 coronavirus (Covid-19)	Anticipating countermeasures to ensure work continuity such as teleworking or virtual meetings. A six-month period is also planned at the end of the project for security	H	M
2	Political risks such as an unstable political situation, cabinet shuffle or attempted putsch	A continuous adaptation will be needed through proposals of the Management Committee to the EU	L	H
3	Corruption leading to fund diversion	Ensuring full transparency of any fund used	L	L
4	Difficulties (financial, staffing) of one partner during the project execution	The case will be anticipated in the Grant and in the Consortium agreement, with reinforced support from the coordination	L	M
5	Partners poorly experienced with European projects	Support by the experienced EU partners	L	L
6	Insufficient stakeholder engagement at national or local level and lack of interest at local level to participate in training sessions.	Massive awareness-raising campaigns will widely promote and strengthen the visibility and influence of AfricaMaVal and thus highlight several solutions for improving ESG conditions and seeking attractive investment opportunities.	M	M

3.5. Description of WP5 “Building an EU and Africa business networking with upstream and downstream companies “activities

Start date: M1 (June 2022); End date: M36 (May 2025)

Work Package Leader: (MADI)

1. Task 5.1 Mapping African clusters

Start date: M1 (June 2022) End date: M18 (November 2023)

Task Leaders: Frank Dixon Mugenyi (Main coordinator MADI); Jean Baptiste Sabukwigura (Assistant Project Manager MADI); Angela Mulenga (MADI); Frank Wesley (MADI); Leone Okello (MADI)

Contributors: Andrea Dahik, Roland Gauss (EIT RawMaterials); Vitor Correia, Marko Komac (INTRAW); Carol Zammit (BRGM)

The aim of this task is to **map formal and informal players** (large, small-scale, and artisanal) along the critical minerals value chains, as well as networks and clusters – **downstream** value addition (beneficiation) and **upstream** value addition (beneficiation). Methodology and approach to be applied will include primary and secondary data collection and analysis using the following methods: Online surveys, personal interviews during field events, questionnaires to be filled in both physical and online among others (Appendix1: Methodology for data collection). Also attached is the list of the “*High Level Overview of Data to be Collected*” (Appendix2: data collection). We shall in all our methodologies and approach seek written consent for both personal and non-personal data and will adhere to General Data Protection Regulations (GDPR).

Create an on-line accessible directory and networking platform (EU-Africa RM Networking Platform). In the course of the next two months, MADI will explore suitable host for the Platform either in Africa or in EU. Favourable will be Cloud Hosting. We will consider the fact that the data to be collected and stored on the platform is both Business and Personal nature that needs to be accessible at least for the duration of the Project for purposes of Networking and B2B and as such the Platform has to be accessible and interactive but regulated under the General Data Protection Regulations (GDPR).

Capture local/regional clusters of providers of equipment, support services, transport, education, etc. (intra- and inter-cluster network relationships, and the interdependences of industrial and ASSM clusters). In conducting this activity we consider application of Michael Porters explanation that **clusters affect competition in three broad ways**: first, by **increasing the productivity of companies based in the area**; second, by **driving the direction and pace of innovation**; and third, by **stimulating the formation of new businesses within the cluster**. We will also consider **Hoover's Location Quotient** or Krugman's Specialization Index on the usage of the measurements of geographical concentration and specialization with areal data. This is a new phenomenon in the minerals industries especially in Africa but could be relevant for homogenous minerals

Following the internal AfricaMaVal workshop held on 29th September 2022, there will be a need to conduct a study to establish the best platform to use.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Conducting a study on which platform to use- EU-Africa Networking Digital Platform or LinkedIn AfricaMaVal WorkPlace	01/06/2022	30/11/2023	MADI/BRGM/EIT RM / INTRAW
Action 2: Mapping exercise (downstream and Upstream)			
Action 3: Identifying key Critical Minerals value chains M1 – M5 (We will depend on WP2 to facilitate our work in mapping the stakeholders along the CRM Value Chains.			
Action 4: Identifying key countries rich in Critical minerals M1 – M8 as per WP1 report			
Action 5: Collecting and compiling information and data of stakeholders including clusters along the value chains M5 – M18			
Action 6: Building an online platform	01/09/2022	30/11/2023	MADI
Action 7: Identify and negotiate with Potential Institutions for hosting the platform			
Action 8: Collect information on existing platforms			
Action 9: Design the platform			
Action 10: Test-phase with selected stakeholders from ASM and LSM			
Action 11: Upload the platform			
Action 12: Capture local/regional clusters of providers of goods and services along the value chains	01/06/2022	31/12/2023	MADI/INTRAW

2. Task 5.2 Promoting local content and enabling mining cluster actors

Start date: M12 (May 2023) End date: M24 (May 2024)

Task Leaders: Marko Komac & Vitor Correia, INTRAW

Contributors: Frank Mugenyi (MADI); Jean-Baptiste Sabukwigura (MADI); Angela Mulenga (MADI); Andrea Dahik, Roland Gauss (EIT RawMaterials)

The aim of this task is to improve the framework conditions for European and African companies and organisations to co-create new value, businesses, products and services by transforming the

ways they interact, based also on the on-line Platform being developed under Task 5.1. It aims to introduce a new set of sweeping measures that will substantially increase entrepreneurial capacity of individuals and organisations.

The first step (**Action 5.2.1**) is the development of an Africa-focused mineral RM network (encompassing the technological, environmental, economic and social dimensions) bringing research, academia, industry and governmental stakeholders, to facilitate international collaboration. To this end, using synergies with WP5 and other WPs, a list of relevant institutions will be compiled from publicly available sources. These institutions will be targeted with invitations to join the RM network. A digital brochure will be compiled to this end, that informs about AfricaMaVal as a project and its activities to form such RM network. The on-line Platform developed under Task 5.1 will also facilitate the development of this network. After registration, interested stakeholders can provide information about their respective institution profile, areas of interest etc., and find information about potential networking partners.

It will also promote the development of accredited education and training programmes in mineral processing, mining engineering, geology and sustainability management to improve resources governance and close the RM skill gaps. Current programmes (e.g., *PanAfGeo*, and the inter-university international partnership *Education for Sustainable Development in Africa* supported by the United Nations University Institute for the Advanced Study of Sustainability) will be mapped using desk research and inviting the partners in the RM network to submit relevant information on their programmes and courses (**Action 5.2.2**).

Building on and extending these current programmes, material for courses to be delivered (for free) through Massive Open Online Courses will be developed (**Action 5.2.3**).

The last Action (**5.2.4**) will rely on the settlement of a trans-African mentoring network and scheme for placement of interns and apprentices with upstream and downstream players in the extractive industry. Again, using the RM network and the Platform, organisations across the African continent and in Europe will be invited to host these mentees. Although the task is scheduled to end in M24, it is expected that the mentoring network will remain active beyond the life-time of the project, supported by the Platform (c.f. Task 5.1)

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Promoting RM network formation through targeted networking and outreach activities in Africa and Europe.	01/05/2023	30/11/2023	INTRAW
Action 2: Map accredited education and training programmes with a view to develop partnerships for targeted skills development and training	01/05/2023	30/11/2023	MADI
Action 3: Facilitate the transfer of existing courses to MOOC format	01/11/2023	31/05/2024	INTRAW
Action 4: Develop a trans-African mentoring network	01/11/2023	31/05/2024	MADI

3. Task 5.3 Strengthening African mining clusters with a view to build B2B relations

Start date: M18 (November 2023) End date: M36 (May 2025)

Task Leaders: Andrea Dahik / Roland Gauss EIT RawMaterials

Contributors: Marko Komac & Vitor Correia (INTRAW), Frank Mugenyi, Jean Baptiste Sabukwigura, Angela Mulenga (MADI)

This task aims at creating resilient value chains that integrate SME and ASSM actors in the EU and Africa in upstream and downstream clusters, harnessing the full potential of the African Continental Free Trade Area (AfCFTA) and existing EU-Africa cooperation networks. Thus, several targeted measures will be implemented: i) from WP3, analyse options for setting policy/financial incentives to develop international clusters across the raw materials value-chains; ii) Explore alternative financing models, such as micro-finance or crowdfunding (WP3 and WP4) using the country case studies; iii) with WP3 and WP6 and international development actors (OECD, UNDP, WB, ADB, GIZ, AFD, etc.), negotiate with upstream and downstream companies to contribute to a special basket fund (CSI fund) for funding training and networking activities; iv) conduct targeted Business-to-Business (B2B) networking events vertically or transversally across the value-chains that can bring together interested actors face to face (at relevant regional events) and online through the EU-Africa Raw Materials Networking Platform developed in Task 5.1; v) foster win-win partnerships/twinning between clusters and value chain actors in Africa and the EU based on the EUAfrica Raw Materials Networking Platform in brokerage events

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Analyze options for setting policy/financial incentives to develop new and expand or engage existing international clusters across the raw materials value-chains (with WP3) Build on existing and emerging success cases.	01/11/2023	31/03/2024	MADI
Action 2: Explore alternative financing models, with WP3/WP4 and the country case studies;	01/01/2024	31/05/2024	MADI
Action 3: Negotiate with upstream and downstream companies to contribute to a special basket fund (CSI fund) for funding training and networking activities	01/06/2024	29/02/2024	MADI, INTRAW (contributing)
Action 4: Organise Business-to-Business (B2B) networking events (e.g. at regional level) vertically or transversally across the value-chains face to face and online through the EU-Africa Raw Materials Networking Platform (cf. Task 5.1); Strategically linked with key project meetings and external events, especially investment-focused events. Targeted pitching events, in person or online.	01/01/2024	30/04/2025	EIT RM, MADI

Action 5: Foster win-win partnerships/twinning between clusters and value chain actors in Africa and the EU based on the EU-Africa Raw Materials Networking Platform at brokerage events (held together with workshops or other project events)..	01/01/2024	30/04/2025	MADI, INTRAW, EITRM
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4. Deliverables

Number	Title	Due Date	Responsible
D5.1	EU-Africa Raw Materials Networking Platform	30/11/2023, 31/05/2025	MADI
D5.2	Report on improved conditions for building business relationships	30/11/2024	INTRAW
D5.3	Report on enabling networking and B2B relationship building	31/05/2025	EITRM

5. Milestones of WP5

Number	Title	Verification mean	Due Date	Responsible
5.1	African and EU data collected including Clusters and Online accessible Platform Developed	Online Accessible Platform/Report	30/11/2023	MADI
5.2	Local Content promoted and Cluster Actors enabled	Report	30/11/2024	INTRAW
5.3	African Mining clusters developed through B2B	Report	29/02/2025	EIT

6. Interaction with other WPs

Number	Interaction description	Responsible
WP3	Task. 3.3, 3.4 and 3.5 for exploring and assessing financial incentives and alternative financing models	HCF, DMT
WP8	Task 8.2 and 8.3 to exploit on the campaign to promote B2B platform and events. Task 8.4 to locate and facilitate targeted dialogues and use of the Platform.	LGI, EGS
WP9	Task 9.3 and 9.4 for feedback and networking on country cases and ensure project's sustainability after project's lifetime.	BRGM, MADI
WP6	Task 6.2, 6.3, 6.4 to retrofit the strategy creation with the stakeholder mapping and feedback from B2B relations.	EITRM, WRFA

7. Risks of WP5

Contractual risks (number, description, risk-mitigation), probability (L=low; M=medium, H=high) that the risk occurs and impact (L=low; M=medium, H=high) if the risk occurs. Other risks (not in GA) can be added so they can be followed during the project. Risk mitigation: P=preventive actions / C=contingency actions.

Number	Risk description	Risk mitigation	Proba	Impact
1	Pandemic risks, such as SARS-CoV-2 coronavirus (Covid-19)	Anticipating countermeasure to ensure the work continuity such as teleworking or virtual meeting. A six-month period is also planned at the end of the project for security	H	M
2	Political risks such as an unstable political situation, cabinet shuffle or attempted putsch	A continuous adaptation will be needed through proposals of the Management Committee to the EU	L	H
3	Corruption leading to fund diversion	Ensuring a full transparency of any fund used	L	L
4	Difficulties of one partner during the project execution	The case will be anticipated in the Grant and in the Consortium agreement, with reinforced support from the coordination	L	M
5	Partners poorly experienced with European projects	Support by the experienced EU partners	L	L
6	Insufficient stakeholder engagement at national or local level	Massive awareness raising campaigns will widely promote and strengthen the visibility and the influence of AfricaMaVal and thus highlight several attractive investment opportunities	M	M
7	Difficulty of CGS during the Grant Agreement preparation process to provide administrative document for the LEAR validation	Submission of the Grant Agreement without CGS partner, and proposal of an amendment at the beginning of the project once the CGS's LEAR will be validated.	H	H

3.6. Description of WP6 “Developing a strategy for integration for EU and Africa value chains for the energy and digital transition activities”

Start date: M1 (June 2022); End date: M33 (March 2025)

Work Package Leader- co-Leader: Andrea Dahik, EIT RM (Interim Main Contact Point) – Roland Gauss, EIT RM

1. Task 6.1 Map relevant EU-funded activities

Start date: M1 (June 2022) End date: M6 (November 2022)

Task Leaders: Esther Laabs, EIT RM

Contributors: Gaetan Lefebvre (BRGM), Sam Whittlesey (LGI), Frank Mugenyi, Jean Baptiste Sabukwigura, Leone Okello, Angela Mulenga (MADI), Shahrzad Manoochehri, Robin Gilli (WRFA), Patrick Wall (EGS)

The aim of this task is to map the relevant EU-funded activities and projects with potential synergies for AfricaMaVal as well as African projects.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Create a template for the collection of the information, define priority criteria and key information categories for mapping relevant projects (EU-funded, national funded, African funded)	10/09/2022	20/09/2022	EITRM, WRFA
Action 2: Contact partners involved in the task and distribute research focus	20/09/2022	26/09/2022	EITRM
Action 3: Mapping of EU-Projects and define methodology for prioritizing projects	26/09/2022	28/10/2022	EITRM, BRGM, LGI, MADI, EGS, WRFA, (CGS)
Action 4: Analyse first EU-Projects database	01/10/2022	11/11/2022	EITRM
Action 5: Prioritize project with high potential for AfricaMaVal	12/11/2022	18/11/2022	EITRM, BRGM, LGI, MADI, EGS, WRFA
Action 6: Consolidate database and report with prioritized projects (State of Play)	21/11/2022	25/11/2022	EITRM

2. Task 6.2 Conceptualize and synthesize the input from the mapping exercises

Start date: M6 (November 2022) End date: M14 (July 2023)

Task Leaders: Esther Laabs (EIT RM); tbd (EIT RM)

Contributors: Gaetan Lefebvre (BRGM), Daniel Oliveira (LNEG), Philip Schuette, Gudrun Franken (BGR), Frank Mugenyi, Jean Baptiste Sabukwigura, Leone Okello, Angela Mulenga (MADI), Andor Lips (HCF), Shahrzad Manoochehri, Robin Gilli (WRFA), Sam Whittlesey (LGI), Zenzi Natasha Awases (AWIMA), Lukas Förster, Nikolas Christou (DMT)

The aim of this task is in a first stage to outline the needs of the twin transition and link them to the first results of the mapping exercises developed in WP1, WP2 and WP7 as well as to establish

the targets and goals of the strategy and conduct a first assessment of challenges and opportunities.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Outline the twin transition needs based on EC reports and other key policy documents, focusing on demand of specific ECRM, supply gaps, bottlenecks, ESG requirements.	01/11/2022	15/03/2023	EITRM, WRFA
Action 2: Connect with other WPs on the results of their mapping exercises and exchange on key findings, preliminary assessment of the identified opportunities and gaps, preliminary SWOT analysis for the development of the EU-African responsible sourcing strategy	23/01/2023	03/03/2023	EITRM, BRGM, all
Action 3: Discuss the findings about twin transitions needs with other WPs	15/03/2023	01/04/2023	EITRM, all
Action 4: Draft a first outline on the structure of the strategy	01/04/2023	15/04/2023	EITRM
Action 5: Connect with WP4 and synthesize challenges identified in Task 4.1 and 4.2	15/04/2023	15/05/2023	AWIMA, MADI
Action 6: Define opportunities: what are the supply opportunities identified by WP1 (Task 1.3), which are promising business opportunities identified by WP 2 (Task 2.2), which are the preliminary outcomes for responsible investment identified by WP 7 (Task 7.5)	15/04/2023	15/05/2023	LNEG, DMT, BGR, MADI, HCF
Action 7: Prepare and conduct online workshop with WPs on vision, target, and goal definition of the strategy in a collaborative way (internally).	15/05/2023	01/06/2023	EITRM, WRFA, BRGM
Action 8: Synthesize the strategy outline	15/05/2023	23/06/2023	EITRM

3. Task 6.3 Advance the strategic outline (Stage 1) for value chain/web integration

Start date: M12 (May 2023) End date: M24 (May 2024)

Task Leaders: Roland Gauss, (EIT RM); tbd, (EIT RM)

Contributors: Gaetan Lefebvre (BRGM), Daniel Oliveira, Jorge Carvalho, Teresa Leao (LNEG), Philip Schuette, Gudrun Franken, Henrike Sievers, Christoph Wurl, Florian Erdmann (BGR), Frank Mugenyi (MADI), Andor Lips (HCF), Shahrzad Manoochehri, Robin Gilli (WRFA), Sam Whittlesey (LGI), Zenzi Natasha Awases, Georgette Barnes (AWIMA), Lukas Förster, Nikolas Christou (DMT)

The aim of this task is to advance the strategy outline through a feedback loop with WP2, 3, 4, 5 and 7 and to engage with relevant stakeholders in a dedicated EU-Africa Raw Materials Strategy Workshop to foster co-creation. Additionally, this task will contribute to stakeholder relations, data management and the data platform.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Establish regular communication with WP 2 (Task 2.2 and 2.3), WP 3 (Task 3.3), WP 4 (Task 4.2, 4.3 and Task 4.4), WP 5 (Task 5.1 and Task 5.3), WP 7 (Task 7.2 and Task 7.4), WP 9 (Task 9.4)	15/05/2023	15/05/2024	EIT RM, DMT, HCF, WRFA, MADI, BGR, AHK
Action 2: Consult partners and identify relevant stakeholders for Strategy Workshop and networking event	15/05/2023	15/07/2023	EITRM, EGS, BRGM, BGR
Action 3: Draft concept note of the Strategy workshop and networking event (goals of workshop, type of event, audience, possible date, and location) to be hosted as side event of larger AfricaMaVal event.	15/06/2023	15/07/2023	EITRM, LGI, BRGM, EGS
Action 4: Consult concept note with partners	15/07/2023	15/08/2023	EITRM
Action 5: Design and plan the event and content including research of audience and communication plan	15/08/2023	15/10/2023	EITRM, LGI, MADI, BGR, BRGM
Action 6: Contact stakeholders and possible speakers, inform about event	15/10/2023	15/11/2023	EITRM, LGI
Action 7: Design interactive tools (e.g. survey, world café during workshop) to assess biggest risks and opportunities identified by relevant stakeholders and/or partners	15/08/2023	15/11/2023	EITRM, WRFA
Action 8: Host Strategy Workshop to define priority areas of European-African cooperation and co-creation of the strategy	15/01/2024	15/03/2024	BGR, MADI, EITRM
Action 9: Workshop/Event debriefing	15/03/2024	15/04/2024	EITRM
Action 10: Advance the strategy outline with feedback loop of Action 1	15/10/2023	15/05/2024	EITRM, all
Action 11: Integrate findings of workshop and feedback loop in strategy paper	15/02/2024	15/05/2024	EITRM

4. Task 6.4 Responsible sourcing strategy with close EU-Africa collaboration and synergies in the context of the EU Green Deal and the twin transition

Start date: M25 (June 2024) End date: M33 (February 2025)

Task Leaders: Shahrzad Manoochehri, Robin Gilli and Mathias Schluep (WRFA)

Contributors: EIT RM Roland Gauss, tbd (EIT RM), Gaetan Lefebvre (BRGM), Daniel Oliveira (LNEG), Philip Schuette, Gudrun Franken (BGR), Frank Mugenyi, Jean Baptiste Sabukwigura, Leone Okello, Angela Mulenga (MADI), Andor Lips (HCF), Sebastien Balech (LGI)

The aim of this task is to build on the established connections and create a catalyst for EU-Africa collaboration through engagement with relevant stakeholders. More specifically, this task aims to ensure that the draft strategy is aligned with the twin transition objectives and assure that it takes sustainable financing models and waste valorisation recycling concepts into consideration. Furthermore, this task aims to prepare and furnish a commitment for strategy uptake and ensure a legacy beyond the project's end.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Define a plan for engagement with key EU and African stakeholders (i.e. stakeholders identified in tasks 6.1 and 6.2, WP5 and country cases) for finalization and uptake of the strategy	01/06/2024	15/06/2022	WRFA, EIT RM, BRGM, LNEG, EIT, BGR, MADI, HCF and LGI
Action 2: Engage with relevant stakeholders on a regular basis (e.g. via consultation meetings) to ensure that the draft strategy is aligned with the twin transition objectives and assure that sustainable financing models as well as clear waste valorisation recycling concepts are taken into consideration	15/06/2024	15/08/2024	EIT RM, WRFA, BGR and MADI
Action 3: Engage with relevant stakeholders to assess the opportunities and prepare the uptake of the strategy. This action will be performed in close collaboration with WP5 and WP7 for identification of potential cases for uptake of the strategy	01/08/2024	01/11/2024	EIT RM, WRFA, BGR and MADI
Action 4: Draft concept note for a workshop#2 (Strategy Uptake Workshop) with high level stakeholders to discuss the uptake of the strategy (goals of the workshop, expected outcome, type of engagement, audience and date). The workshop will be held in Switzerland.	01/08/2024	01/09/2024	WRFA & EIT RM
Action 5: Consult the concept note for workshop#2 with all partners	01/09/2024	15/09/2024	WRFA, EIT RM, BRGM, LNEG, EIT, BGR, MADI, HCF and LGI
Action 6: Workshop preparation (design, content, speakers and logistic)	15/09/2024	15/10/2024	WRFA, EIT RM, LGI
Action 7: Organize Strategy Uptake Workshop (workshop#2) with high level stakeholders to disseminate the strategy and discuss possibilities for its uptake and implementation	15/10/2024	01/12/2024	WRFA, EIT RM, BGR, MADI and LGI

Action 8: Integrate the finding of the workshop and finalize the strategy, including recommendations for its implementation	01/12/2024	01/03/2025	EIT RM & WRFA
Action 9: Dissemination activities and promotion campaigns using the AfricaMaVal Platform to ensure a legacy behind the project's end	01/12/2024	01/03/2025	WRFA, EIT RM, and LGI

5. Deliverables

Number	Title	Due Date	Responsible
D6.1	State of Play (EU activities)	30/11/2022	EIT RM
D6.2	Strategy Outline - Stage 1	31/07/2023	EIT RM
D6.3	Strategy Draft - Stage 2	31/05/2024	EIT RM
D6.4	Final strategy paper (Action Plan) - Stage 3	28/02/2025	EIT RM

6. Milestones of WP6

Number	Title	Verification mean	Due Date	Responsible
MS6.0	Start of structured collaboration and kick off WP6	Document, minutes	15/09/2022	EITRM
MS6.1	Template for project mapping is drafted and shared with project partners	Document, spreadsheet	20/09/2022	EITRM
MS6.2	Project database is prioritized and consolidated	Document, state of play	30/11/2022	EITRM
MS6.3	First outline of twin transition needs is drafted and shared with WP	Document	01/04/2023	EITRM
MS6.4	Strategy Outline is developed	Document	30/07/2023	EITRM
MS6.5	List of relevant stakeholders and concept note for strategy workshop are consolidated	Document	30/10/2023	EITRM
MS6.6	Strategy Workshop is hosted	Document, Media Coverage	30/03/2024	EITRM
MS6.7	Strategy Draft Stage 2 is consolidated	Document	30/05/2024	EITRM
MS6.8	Strategy Uptake Workshop (Workshop #2) is hosted	Document, Media Coverage	30/12/2024	WRFA
MS6.9	Final version of the strategy is developed	Document	28/02/2025	EITRM

7. Interaction with other WPs

Number	Interaction description	Responsible
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WP2	Task 2.2. Identify and assess existing African value chain projects of DMT ECRMs (M6-M20).	
WP5	Task 5.1. Mapping African clusters (M1-M18)	MADI
WP7	Task 7.1 Preliminary project and country screening (M1-M6)	BGR
WP1	Task 1.3 Pan-African inventory of existing ore processing and refining capacities (M8-M16)	LNEG
WP2	Task 2.2 Identify and assess existing African value chain projects of ECRMs (M6-M20)	DMT
WP3	Task 3.3 Mapping of Financing and Investment Instruments for Raw Materials Projects in Africa (M7-M30)	HCF
WP4	Task 4.1 Assessment of social, environmental, and governance (ESG) challenges in mining across Africa (M1-M12)	AWIMA
WP4	Task 4.2 Enabling mining practices aligned to ESG goals (M1-M30)	SSSA
WP8	Task 8.4 Dialogues (M1-M36)	EGS
WP9	Task 9.4 Case studies implementation (M1-M18)	BRGM
WP2	Task 2.3 Identify potential bottlenecks in the respective value chain segments (M20-M26)	DMT

WP2	Task 2.4 Identify, assess and quantify opportunities and recommendations (M26-M34).	DMT
WP7	Task 7.5 Evaluation of responsible investment for artisanal and small-scale mining (M10-M21)	LS
WP4	Task 4.3 Fostering best practice for responsible extraction (M18-M33)	WRFA
WP4	Task 4.4 Business models that correspond to the ESG challenges (M12-M30)	WRFA
WP5	Task 5.3 Strengthening African mining clusters with a view to build B2B relations (M18-M36)	EIT RM
WP7	Task 7.2 Strategic, economic and ESG evaluation for industrial investment projects (M7-M24)	BGR
WP7	Task 7.4 National regulatory framework and good governance evaluation (M7-M21)	AHK

8. Risks of WP6

Contractual risks (number, description, risk-mitigation), probability (L=low; M=medium, H=high) that the risk occurs and impact (L=low; M=medium, H=high) if the risk occurs. Other risks (not in GA) can be added so they can be followed during the project. Risk mitigation: P=preventive actions / C=contingency actions.

Number	Risk description	Risk mitigation	Proba	Impact
1	Pandemic risks, such as SARS-CoV-2 coronavirus (Covid-19)	Anticipating countermeasure to ensure the work continuity such as teleworking or virtual meeting. A six-month period is also planned at the end of the project for security	H	M
2	Political risks such as an unstable political situation, cabinet shuffle or attempted putsch	A continuous adaptation will be needed through proposals of the Management Committee to the EU	L	H
3	Corruption leading to fund diversion	Ensuring a full transparency of any fund used	L	L
4	Difficulties of one partner during the project execution	The case will be anticipated in the Grant and in the Consortium	L	M

		agreement, with reinforced support from the coordination		
5	Partners poorly experienced with European projects	Support by the experienced EU partners	L	L
6	Insufficient stakeholder engagement at national or local level	Massive awareness raising campaigns will widely promote and strengthen the visibility and the influence of AfricaMaVal and thus highlight several attractive investment opportunities	M	M
7	Difficulty of CGS during the Grant Agreement preparation process to provide administrative document for the LEAR validation	Submission of the Grant Agreement without CGS partner, and proposal of an amendment at the beginning of the project once the CGS's LEAR will be validated.	H	H

3.7. Description of WP7 “Responsible Investment Opportunities” activities

Start date: M1 (June 2022); End date: M36 (May 2025)

Work Package Leader- co-Leader: Philip Schütte, Gudrun Franken (BGR)

1. Task 7.1 Preliminary project and country screening

Start date: M1 (June 2022) End date: M6 (November 2022)

Task Leader: Philip Schütte (BGR)

Contributors: Holger Grundel (Levin Sources), Andrea Dahik (EIT RM)

In general, WP7 shall work on an Africa-wide scale but consistent implementation requires alignment with national large- and small-scale ECRM mining sector developments. The aim of this task, therefore, is provide the necessary orientation to serve as a framework for subsequent task implementation in WP7. While the final task of WP7 (Task 7.6) shall build on all relevant partner WPs (especially WP1-4 and WP9 country case studies), the AfricaMaVal project schedule requires that other WP7 tasks (7.2-7.5) will be implemented in parallel to said WPs and, thus, cannot fully build on the latter results. Therefore, preliminary screenings of Task 7.1 are required to fill this gap.

A progressive and somewhat flexible implementation is envisaged for WP7, allowing the WP to consider relevant information from other WPs, once these become available. The preliminary screening Task 7.1 seeks to identify a limited number of large-scale industrial mining projects as a base for developing the draft methods for implementing Task 7.2. Method development on the topic of “ESG” further allows informed discussions with other AfricaMaVal partners working on this subject to ensure complementarity of approaches. Draft method development is largely a desk-based task but initial method development requires a certain number of in-country project visits for calibration. These will be based on and create synergies with the case study countries managed by BGR (Namibia, DRC). Task 7.1 shall further provide high-level groups of all African countries in terms of their indicative ECRM production relevance by industrial and artisanal means to appropriately scale country-specific work input for tasks 7.2-7.5.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1 : High-level country ECRM screening	01/07/2022	01/11/2022	BGR
Action 2 : Draft project fact sheet methods	01/07/2022	01/11/2022	BGR
Action 3 : Reporting and WP7 dissemination	01/11/2022	01/12/2022	BGR

2. Task 7.2 Strategic, economic and ESG evaluation for industrial investment projects

Start date: M7 (December 2022) End date: M24 (May 2024)

Task Leaders: Gudrun Franken, Malte Drobe (BGR)

Contributors: Nikolaos Christou, Lukas Förster (DMT GmbH & Co. KG), Sodhie Naicker, Hudson Mtegha, Herman Cornelissen (DMT Kai Batla), Andor Lips (HCF)

The aim of this task is to provide an illustrative overview on industrial exploration, mining and refining projects in Africa in terms of their economic and ESG features. These features will be presented as project fact sheets and, along with information from other Tasks and WPs, shall be considered as input into the list of investment recommendations to be developed in Task 7.6. As it is one of the implicit economic objectives of the EU to increase access to ECRM in time to achieve the major economic transition foreseen within the Green Deal and digital transition, the project development status shall be considered as a relevant selection criterion. Specifically, project selection shall consider both exploration projects with potentially longer lead times and higher risks for successful development, and active mining projects which, by means of expansion or satellite deposit development with shared mining infrastructure, have the potential to provide ECRM to the EU on a shorter time scale.

Task 7.2 will consider the draft methods developed under 7.1 but seek to validate and refine these by inviting input from qualified stakeholders. To this end, a dedicated workshop will be organized early on during task implementation. Methodologically, the economic and ESG evaluation of industrial projects will seek to illustrate features from an investor's perspective. As such, it fulfils a complementary function to project reviews that are based on other perspectives offered in different WPs. Moreover, the up to 100 projects evaluated in this task will be selected on an Africa-wide scale that will be calibrated against the relevance of the ECRM project pipeline in any given country as noted under Task 7.1. As such, geographically, these projects are expected to range well beyond the ten case study countries that are considered for project evaluations elsewhere (KPI 1.2). Finally, this task exclusively focuses on industrial projects while artisanal and small-scale opportunities will be evaluated as part of Task 7.5. Implementation of the present task shall be closely aligned with Task 7.4 to ensure availability of information on the national regulatory and good governance context.

Note that this task has a directly complementary component in Task 7.3 where infrastructure features of projects shall be evaluated. Since infrastructure development may have a strong regional component, it was agreed with the responsible task leader (DMT) that a dedicated infrastructure evaluation will only be required for a certain number of projects. The extra time resources will enable DMT to additionally evaluate a number of regional infrastructure projects. These infrastructure-focused project evaluations shall be included in the target sum (100) of projects to be evaluated under WP7.

The present task contributes to AfricaMaVal Objective 3.1. However, it is important to note that the up to 100 projects included herein do not directly correspond to the investment recommendations to be developed under Task 7.6. The latter will be more comprehensive, as further described below. There are two possible limitations to Task 7.2: availability of project-specific information as well as time limitations. The former is considered a major risk for the feasibility to evaluate projects in those countries that face challenges in terms of professional project data management. This risk may lead to the underrepresentation of such projects in the final deliverable but cannot be avoided, due to the necessity to evaluate projects based on credible input information. The latter risk is manageable by continuously monitoring fact sheet progress through time and adjusting the level of evaluation detail in line with the available work capacities.

Actions	Start Date	Due Date	Responsible (organisation)
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Action 1 : Finalize and calibrate evaluation methods including exchange with other WPs	01/12/2022	31/03/2023	BGR
Action 2 : Perform economic project evaluations	01/01/2023	31/05/2024	BGR
Action 3 : Perform ESG project evaluations	01/01/2023	31/05/2024	BGR

3. Task 7.3 Infrastructure evaluation for industrial investment projects

Start date: M10 (March 2023) End date: M21 (February 2024)

Task Leaders: Nikolaos Christou, Lukas Förster (DMT GmbH & Co. KG), Sodhie Naicker, Hudson Mtegha, Herman Cornelissen (DMT Kai Batla)

Contributors: Malte Drobe (BGR)

The aim of this task is to assess the infrastructure development, which is a critical factor in Africa, affecting decisively the feasibility of many mining and refining projects on the continent. With the current approach, the evaluation focuses initially on the assessment of the infrastructure of individual projects and, also building on the output of WP2, continues with the attempt to identify the regional project clusters being served of common infrastructure. The whole assessment is complemented with the consideration of additional factors connected to technical, operational, financial, sustainability, and regional development factors associated with infrastructure.

More specific, the first action focuses on the infrastructure investigation of selected individual projects derived from WP 7.2. Specific parameters to be examined include logistics, defining the capacity of handling and transporting quantities of bulk material, energy sufficiency, considering availability of conventional or alternative supply sources as well as sustainable consumption of natural resources with a special focus on water.

A regional clustering of examined projects will be attempted during the second action targeted towards identifying infrastructure dependencies and technical, financial, environmental, social or political bottlenecks. The results of the process will be documented qualitatively with the production of SWOT analyses and/or other alternative material like "heat maps", presented in a way similar to the overall project fact sheet approach.

The third and final action will facilitate a complementary assessment, which will consider infrastructure costs, capacity requirements, and risks. The assessment will also differentiate available energy types according to their expected carbon emission impact as well as distinguish regional infrastructure development plans and implementation status. All results will be added to the project factsheets described under Task 7.2 (D 7.1).

Actions	Start Date	Due Date	Responsible (organisation)
Action 1 : Evaluation of infrastructure requirements of individual projects	01/12/2022	31/05/2024	Herman Cornelissen (DMT Kai Batla)
Action 2 : . Identification of regional project clusters in terms of infrastructure	01/03/2023	29/02/2024	Nikolaos Christou (DMT GmbH & Co. KG)
Action 3 : Complementary evaluation of cost, risk, sustainability and developmental factors	01/03/2023	29/02/2024	Herman Cornelissen (DMT Kai Batla)

4. Task 7.4 National regulatory framework and good governance evaluation

Start date: M7 (December 2022) End date: M21 (February 2024)

Task Leaders: Selleen Sewpershad and Simon Doleschal (AHK)

Contributors: Gudrun Franken, Malte Drobe (BGR), Holger Grundel (Levin Sources)

The aim of this task is to assess the national regulatory framework and good governance governing responsible mining investment in African countries, based on the applicable mining, industrial, trade as well as fiscal laws, regulations and policies. Initially, the evaluation will be conducted as a high-level desktop review with the main objectives: a) provide a general overview of the national legislation and of its main characteristics and content, with particular regard to aspects of regulation regarding the mining law; and b) evaluate whether the national legislation in place supports or hampers the development of the mining industry with regards to value addition and investment. This will be supplemented by an evaluation of the national good governance, transparency and accountability frameworks. All results will be documented as country profiles.

While Task 7.2 will look at the investment context on a project basis, Task 7.4 will analyse the ecosystem provided through the laws, regulations and policies on a per country basis, also considering the artisanal sector and its role within the country as a basis for Task 7.5, resulting into a joint deliverable. While WP 4 will illustrate the ESG framework mainly from a community perspective, the Task 7.4 performs the regulatory evaluations from an investor perspective. Potential differences and synergies will be jointly communicated within the AfricaMaVal project. Task 7.4 supports the project evaluations to be performed in Task 7.2 and implementation will be closely coordinated to this end. The assessment will further address the development needs taking into account regulatory flexibility as well as the right to participate in decision making, access to information, access to justice and redress. Guidelines of the User's Guide on Assessing the Rule of Law in Public Administration: The Mining Sector as developed by the UNDP, the Folke Bernadotte Academy and the Swedish Environmental Protection Agency will give guidance on the assessment. Special considerations will assess the following four factors, namely economics, ecology, politics and culture. Provided with the priorities derived from Task 7.1 the mineral endowment will lay the basis for the scope of each country profile. Translation and evaluation of the legal texts in French, Portuguese and English will require the support and input of WP or country case study leaders of the respective countries. If applicable, in order to ensure safe handling of personal data, anonymization of personal details will be done, in order to comply with the respective GDPR.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Evaluation and review of assessment criteria	01/12/2022	28/02/2023	AHK
Action 2: Assessment of countries based on criteria and through analysis on the consequences of investment opportunities.	28/02/2023	31/12/2023	AHK
Action 3: Review of evaluation	01/12/2023	29/02/2024	AHK

5. Task 7.5 Evaluation of responsible investment for artisanal and small-scale mining

Start date: M10 (March 2023) End date: M21 (February 2024)

Task Leaders: Holger Grundel, Jara Bakx, Rosanna Tufo, Nabilah Kesington (Levin Sources)

Contributors: Jürgen Vasters, Philip Schütte (BGR), Simon Doleschal, Selleen Sewpershad (AHK), Andrea Dahik (EIT RM)

The aim of this task is to identify responsible investment opportunities to strengthen artisanal and small-scale mining (ASM) value chain potential for ECRM, to feed into Task 7.6. The emphasis will be on identifying responsible investment opportunities in relevant countries that strengthen the artisanal sector's supply potential and address ESG impacts while also contributing to higher value addition and economic development. The geographical focus of this task will be based on the countries identified under Task 1.3 and Task 7.1, and results will be added as country profiles under a joint deliverable with Task 7.4. The work under this task will be coordinated closely with the other tasks in this WP (especially Tasks 7.4, 7.6) as well as core activities under WP 2 (especially Tasks 2.1-2.4).

Actions	Start Date	Due Date	Responsible (organisation)
Action 1 : National-level evaluations of ASM ECRM supply potential	01/03/2023	31/05/2023	Levin Sources
Action 2 : Mapping of ASM ECRM value chains	01/06/2023	30/11/2023	Levin Sources
Action 3 : Assessment of human rights, social, environmental and governance impacts and challenges (ESG factors) along upstream ASM ECRM value chains	01/06/2023	30/11/2023	Levin Sources

6. Task 7.6 Development of responsible ECRM investment opportunities and recommendations

Start date: M25 (June 2024) End date: M36 (May 2025)

Task Leaders: Philip Schütte (BGR)

Contributors: Nikolaos Christou, Lukas Förster (DMT GmbH & Co. KG), Sodhie Naicker, Hudson Mtegha, Herman Cornelissen (DMT KB), Simon Doleschal, Selleen Sewpershad (AHK), Andrea Dahik (EIT RM), Andor Lips (HCF), Holger Grundel (Levin Sources)

Task 7.6 aims to create a synthesis of investment recommendations arising from the various preceding tasks of WP7 while also integrating relevant input from other WPs. The list of investment opportunities and recommendations contributes to KPI 3.1. It shall include, among others, references to specific projects evaluated under Task 7.2 (and 7.3) without actually providing a specific ranking of these projects. Rather, Task 7.6 will illustrate different options for the user to sort the projects according to different priorities, such as ECRM supply relevance, ESG impact, or local economic relevance. This shall also consider the results on opportunities in the artisanal and small-scale mining sector as defined in Task 7.5. General findings in this regard shall

be presented at a workshop where stakeholder feedback may be invited for the final iteration of the task at hand.

Furthermore, investment recommendations may be conceptual in nature and consider strategic recommendations, rather than just listing individual projects. Strategic aspects in this regard may consider input on project financing questions evaluated in WP3. They may further be open for potential extension beyond the EU-Africa business ecosystem, reflecting that certain third parties have gathered significant know-how how to facilitate successful ECRM mine development in Africa. Based on this observation, it might be beneficial for all concerned parties to explore possible strategic alliances to advance common objectives. In connection with these strategic aspects of investment recommendations, Task 7.6 shall be aligned with the value chain integration strategy developed in WP6.

A challenge for the presentation of Task 7.6 results might be the potential heterogeneity of AfricaMaVal project findings generated thus far which may render it difficult to provide investment recommendations that follow a highly streamlined pattern. It is proposed to consider this possible heterogeneity as an indication of the inclusivity and diversity of the AfricaMaVal stakeholder base, and as a reflection of the broad EU-Africa economic ecosystem as a whole. Another challenge associated with Task 7.6 is expectation management. Successfully developing ECRM projects takes time, faces market uncertainties, implies certain project and country risks, and takes place in a highly competitive business environment. As such, there can be no definitive prediction on the expected impact of investment recommendations with regards to actual project and market developments.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1 : Development of project sorting matrix	01/06/2024	31/07/2024	BGR
Action 2 : Screening of relevant AfricaMaVal results	01/08/2024	30/09/2024	BGR
Action 3 : Development of draft recommendations	01/10/2024	28/02/2025	BGR

7. Deliverables

Number	Title	Due Date	Responsible
D7.1	Fact sheets on project evaluation (strategic, economic, ESG, infrastructure)	31/05/2024	BGR
D7.2	Country profiles on the regulatory framework and the artisanal mining sector	28/02/2024	AHK
D7.3	Summary report and recommendations on responsible investment opportunities (à KPI 3.1)	29/02/2025	BGR

8. Milestones of WP7

Number	Title	Verification mean	Due Date	Responsible
n/a	n/a	n/a	n/a	n/a

9. Interaction with other WPs

Number	Interaction description	Responsible
WP2, WP4	Task 2.1-2.4, Task 4.1: Alignment and coordination of work regarding the ESG assessments and regulations	BGR, AHK, DMT, AWIMA
WP3	Task 3.1: alignment of the concept of ‘investment opportunities’ as used under the WP’s 3 and 7, respectively. WP3 fulfils a complementary role to WP7 as it seeks to advise on the ‘how to invest’ and on the sources of financing, whereas WP7 aims to illustrate potential investment locations and conceptual framework considerations	BGR, HCF
WP6	Task 6.4 (and, to a lesser extent, Tasks 6.2 and 6.3): The objective of this alignment and mutual participation in tasks is to ensure overall consistency of value chain integration strategy and the investment recommendations to be developed in Task 7.6	BGR, EIT Raw Materials
WP8	Dissemination and exploitation of results	BGR, LGI
WP9	Overall coordination and integration of country case study finding	BGR, BRGM

10. Risks of WP7

Contractual risks (number, description, risk-mitigation), probability (L=low; M=medium, H=high) that the risk occurs and impact (L=low; M=medium, H=high) if the risk occurs. Other risks (not in GA) can be added so they can be followed during the project. Risk mitigation: P=preventive actions / C=contingency actions.

Number	Risk description	Risk mitigation	Proba	Impact
1	Pandemic risks, such as SARS-CoV-2 coronavirus (Covid-19)	Anticipating countermeasure to ensure the work continuity such as teleworking or virtual meeting. A six-month period is also planned at the end of the project for security	H	M
2	Political risks such as an unstable political situation, cabinet shuffle or attempted putsch	A continuous adaptation will be needed through proposals of the Management Committee to the EU	L	H
3	Corruption leading to fund diversion	Ensuring a full transparency of any fund used	L	L
4	Difficulties of one partner during the project execution	The case will be anticipated in the Grant and in the Consortium agreement, with reinforced support from the coordination	L	M

5	Partners poorly experienced with European projects	Support by the experienced EU partners	L	L
6	Insufficient stakeholder engagement at national or local level	Massive awareness raising campaigns will widely promote and strengthen the visibility and the influence of AfricaMaVal and thus highlight several attractive investment opportunities	M	M
7	Difficulty of CGS during the Grant Agreement preparation process to provide administrative document for the LEAR validation	Submission of the Grant Agreement without CGS partner, and proposal of an amendment at the beginning of the project once the CGS's LEAR will be validated.	H	H

3.8. Description of WP8 “Communication, dissemination and exploitation “activities

Start date: M1 (June 2022); End date: M42 (November 2025)

Work Package Leader- co-Leader: Joy Cremesty (LGI)

1. Task 8.1 Communication & Dissemination Strategy

Start date: M1 (June 2022) End date: M36 (May 2025)

Task Leaders: Joy Cremesty (LGI)

Contributors: Roland Gauss (EIT RM), Shahrzad Manoochehri (WRFA), Jean-Claude Guillaneau (BRGM) and all partners

Aim of this task:

LGI and EIT RM, in line with the BRGM will develop a **Communication and Dissemination Plan** (D8.1, update on M36) containing goals, key target audiences, channels, and KPIs to assess success. LGI will develop a **visual identity** that will be applied to all project documents, including templates, a flyer, a roll-up, and virtual backgrounds to promote the project at relevant events. LGI will design a **project website** (M3) to serve as the main digital tool for promoting the project, providing key information, as well as news, events, and the project’s public deliverables. An **editorial team** (LGI, EIT RM, WRFA, and BRGM) will coordinate projects dissemination through a blog and social media accounts to communicate about AfricaMaVal disseminate its key results and build an online community. Project activities will be promoted through media and PanAfGeo program communication tools. The task will coordinate publications in open access journals.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Develop Communication & Dissemination Plan (D8.1)			LGI, EIT RM, and BRGM
LGI will send the first version - to be reviewed by EIT RM			
LGI send the first draft to BRGM	29/08/2022	30/09/2022	
BRGM will provide feedback and LGI will make the necessary corrections			
BRGM will submit to the EC portal			
Action 2: Develop Communication Materials (flyer, roll-up, virtual backgrounds)			LGI, EIT RM, WRFA and BRGM
LGI to draft the flyer’s text			
Validate the text with EIT RM, WRFA, and BRGM			
LGI to design the flyer	01/09/2022	30/11/2022	
Validate the flyer’s design			
Make the adaptations (roll-up banner and virtual backgrounds)			
LGI to create a document for partners on the best practices for using the communication materials			

Action 3: Design the project website LGI to propose a wireframe Involved partners to validate the wireframe Regular meetings with BRGM and involved partners to assess the website structure and performance LGI to regularly update the website and propose new ideas for the content and design	01/07/2022	30/05/2025	LGI, EIT RM, WRFA and BRGM
Action 4: Develop the Editorial Team and set an action plan Set a meeting to identify the team members of the editorial team Identify the roles of each of the editorial team Define dissemination objectives, channels, audience and formats Create a monthly editorial plan (shared document) Editorial Team to validate the editorial plan Set monthly meetings with the editorial team to track performance and adjust strategy	01/09/2022	07/10/2022	LGI, EIT RM, WRFA, BRGM

2. Task 8.2 Awareness Raising Campaigns

Start date: M12 (June 2023) End date: M33 (February 2025)

Task Leaders: Joy Cremesty (LGI)

Contributors: Roland Gauss (EIT RM), Shahrzad Manoochehri (WRFA), Jean-Claude Guillaneau (BRGM) and Zenzi Awases (AWIMA)

Aim of this task:

LGI will lead a series of campaigns to give visibility to the generated results of the project. Short videos for social media, infographics, visuals and quizzes will be used. A strategy with objectives, target audiences, KPIs and a content calendar will be designed by all partners involved, and a monitoring routine will be set up. The campaigns will focus on **showcasing the results of the strategic studies** on potential value-web development across Africa and more specifically for the **ten African countries, promoting the best practices of sustainable mining activities** and **disseminating communication materials** for the training courses in cooperation with WP4.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Define the key messages and audiences for the series of campaigns, the strategy, and the content calendar	01/04/2023	20/04/2023	LGI, EIT RM, WRFA & BRGM
Action 2: Develop the Communication materials for the campaign	20/04/2022	31/05/2023	LGI

Action 3: Disseminating communication materials for the training courses in cooperation with WP4 + other existing training programs

LGI and AWIMA

3. Task 8.3 Exploitation

Start date: M1 (June 2022) End date: M36 (May 2025)

Task Leaders: Sam WHITTLESEY (LGI)

Contributors: Jean-Claude Guillaneau (BRGM), Frank Mugenyi (MADI) and All partners

The aim of this task is to strive to maximize exploitation and impacts of the project results during and after the project lifetime, by protecting the IPR of partners, and promoting economic and environmental sustainability in connection with the WP9. **Two exploitation workshops** will be organised during the project (M12 and M24, respectively). An **Exploitation & IP repository will be managed by the Exploitation Manager (LGI)**. This repository will be updated every six months. The exploitation methodology and steps will be included as part of the initial CDEP (D8.1, M4) and the workshop analyses will be included as part of the exploitation plan iterations throughout the project.

The first workshop will collect inputs from partners relating to the ambition and sustainability of the AfricaMaVal business network. It will explore the necessary linkages needed to create sustainable transcontinental value chains, and work to identify key players for dissemination of project results to maximize project impact. It will also address the project's EU-Africa Raw Materials Networking Platform, and explore its strategic design and legacy.

The second workshop will focus on informing the choice of the 100 investment opportunities identified in WP7 that will be a major result of the project. This will notably be informed by value chain development needs highlighted in WP2 with the inputs from the RM sector in WP4 and WP6, and stakeholder engagement from WP5. The exploitation plan will draw on insights from across the project to produce a roadmap of post-project actions needed to implement the most promising and impactful of these identified projects.

The exploitation plan will be updated throughout the project, the methodology included as part of the initial plan (D8.1, M4), outcomes from the workshops and final strategies reported in the final Exploitation Roadmap (D8.2, M36).

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Develop Initial Exploitation plan	30/08/2022	30/09/2022	LGI
Action 2: Prepare initial IP repository spreadsheet	01/11/2022	01/06/2023	LGI
Identify clearly all exploitable project results – both foreseen and unforeseen			
Clearly identify the role of each partner in exploiting results			

List target groups of uptake of results during and post-project			
Action 3: Organise community building workshop Coordinate with WP5 to gather input on the raw materials networking platform Align consortium on scope, ambition and legacy of the AfricaMaVal business network	01/06/2023	30/06/2023	LGI, EIT RM, MADI
Action 4: Organize exploitation workshop for 100 investment opportunities Coordination between LGI and WP7 to support the choice of 100 investment opportunities Workshop with all project partners to align on promising opportunities	01/06/2024	30/06/2024	LGI, BGR
Action 5: Emphasise key exploitable results Regular meeting between BRGM and LGI to assess progress on key exploitable results Link with partners to identify key enablers to implement identified mineral value chain projects – including necessary policy interventions and avenues for financing	01/07/2024	30/06/2025	LGI, BRGM

4. Task 8.4 Dialogues

Start date: M1 (June 2022) End date: M36 (February 2025)

Task Leaders: Patrick Wall, (EGS)

Contributors: Jean-Claude Guillaneau (BRGM), Joy Cremesty (LGI)

The aim of this task is to facilitate targeted dialogue activities to increase the visibility and the outreach of the project actions and it will reinforce the relations and potential collaborations with relevant projects and initiatives involved in EU-Africa RM value chains. Specifically, it will arrange facilities for bilateral dialogues and sessions or side events with key partner initiatives and stakeholders at major events that attract both EU and African interests (e.g., Mining Indaba, Green Deal projects, HLPD-related initiatives), using the well-established contact network built through the PanAfGeo project.

These activities would primarily take place at major events within exhibition booths. This would directly support the mapping exercise carried out by WP6 and targeted outreach efforts or stakeholder dialogues required by other WPs. LGI, with EGS, will organise 3 webinars for relevant key decision makers to further strengthen cooperation. A final event will be organised in Africa to present and disseminate AfricaMaVal results to key stakeholders.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Increase visibility and develop network to facilitate dialogues African stakeholders invited to attend EGS 50th Anniversary events	01/07/2022	31/10/2022	EGS/BRGM
AfricaMaVal booth and promotional/networking activities at Mining Indaba 2023/2024/2025	Feb 2023/2024/2025	Feb 2023/2024/2025	
AfricaMaVal promotional/networking activities at PDAC affiliated events (Annual African Mining Breakfast & Annual Investing in Africa Mining Seminar) 2023/2024/2025	Mar 2023/2024/2025	Mar 2023/2024/2025	
Action 2: Facilitate dialogue activities for other WPs at relevant events			EGS/BRGM
Mining Indaba 2023: side event on EU projects supported by European Commission; targeted dialogues hosted at AfricaMaVal booth	06/02/2023	09/02/2023	
PDAC 2023: opportunity for targeted dialogues at EGS/EU booth	05/03/2023	08/03/2023	
PanAfGeo2 mid-term meeting: opportunity for targeted dialogues with African Geological Survey representatives and EU delegates	TBC April/May 2023	TBC April/May 2023	
PanAfGeo2 final meeting: opportunity for targeted dialogues with African Ministerial & Geological Survey representatives and EU delegates	May/June 2024	May/June 2024	
Action 3: Organise 3 webinars for key decision makers Planning timeline and thematic topics for each webinar (LGI/EGS) Organising Webinar 1: Drafting concept, identifying suitable speakers & sending speaker invitations for Webinar 1 (EGS) Begin promotional activities & open registrations for Webinar 1 (LGI) Host Webinar 1 (LGI) [repeat steps for Webinars 2 or 3]	ADD	ADD	LGI/EGS

5. Deliverables

Number	Title	Due Date	Responsible
D8.1	Initial Dissemination, Exploitation, and Communication Strategy	30/09/2022	LGI
D8.2	Final Dissemination, Exploitation, and Communication Strategy	30/11/2025	LGI

5. Milestones of WP8

Number	Title	Verification mean	Due Date	Responsible
MS1	Flyer and roll-up		30/11/2022	LGI
MS2	Website V2		31/10/2022	LGI
MS12	First Awareness Campaign		31/05/2023	LGI

6. Interaction with other WPs

Number	Interaction description	Responsible
All WPs	WP meetings every 2 months	LGI
All WPs	Tasks Meeting (based on the need)	LGI
WP6	Contribution towards WP6 mapping of EU/African projects or activities relevant to AfricaMaVal through developing the stakeholder network and engaging with interested parties	EGS

7. Risks of WP8

Contractual risks (number, description, risk-mitigation), probability (L=low; M=medium, H=high) that the risk occurs and impact (L=low; M=medium, H=high) if the risk occurs. Other risks (not in GA) can be added so they can be followed during the project. Risk mitigation: P=preventive actions / C=contingency actions.

Number	Risk description	Risk mitigation	Proba	Impact
1	Pandemic risks, such as SARS-CoV-2 coronavirus (Covid-19)	Anticipating countermeasure to ensure the work continuity such as teleworking or virtual meeting. A	H	M

		six-month period is also planned at the end of the project for security		
2	Political risks such as an unstable political situation, cabinet shuffle or attempted putsch	A continuous adaptation will be needed through proposals of the Management Committee to the EU	L	H
3	Corruption leading to fund diversion	Ensuring a full transparency of any fund used	L	L
4	Difficulties of one partner during the project execution	The case will be anticipated in the Grant and in the Consortium agreement, with reinforced support from the coordination	L	M
5	Partners poorly experienced with European projects	Support by the experienced EU partners	L	L
6	Insufficient stakeholder engagement at national or local level	Massive awareness raising campaigns will widely promote and strengthen the visibility and the influence of AfricaMaVal and thus highlight several attractive investment opportunities	M	M
7	Difficulty of CGS during the Grant Agreement preparation process to provide administrative document for the LEAR validation	Submission of the Grant Agreement without CGS partner, and proposal of an amendment at the beginning of the project once the CGS's LEAR will be validated.	H	H

3.9. Description of WP9 “Coordination & Case study Management” activities

Start date: M1 (June 2022); End date: M42 (November 2025)

Work Package Leader- co-Leader: Jean-Claude Guillaneau, coordinator (BRGM); Carol Zammit, deputy-coordinator (BRGM); Sébastien Balech (LGI), Mathilde Videlo (LGI); Philip Schütte (BGR); Michael Haschke (DMT GmbH & Co. KG); Holger Grundel (LS); Frank Dixon Mugenyi (MADI); Daniel de Oliveira (LNEG).

WP9 will encompass all management tasks and will coordinate the countries case studies

1. Task 9.1 Project Management and Coordination

Start date: M1 (June 2022) End date: M42 (November 2025)

Task Leaders: Jean-Claude Guillaneau (BRGM); Carol Zammit (BRGM).

Contributors: Sébastien Balech (LGI), Mathilde Videlo (LGI); Philip Schütte (BGR); Holger Grundel (LS).

The aim of this task is to ensure the overall internal coordination and management of the project.

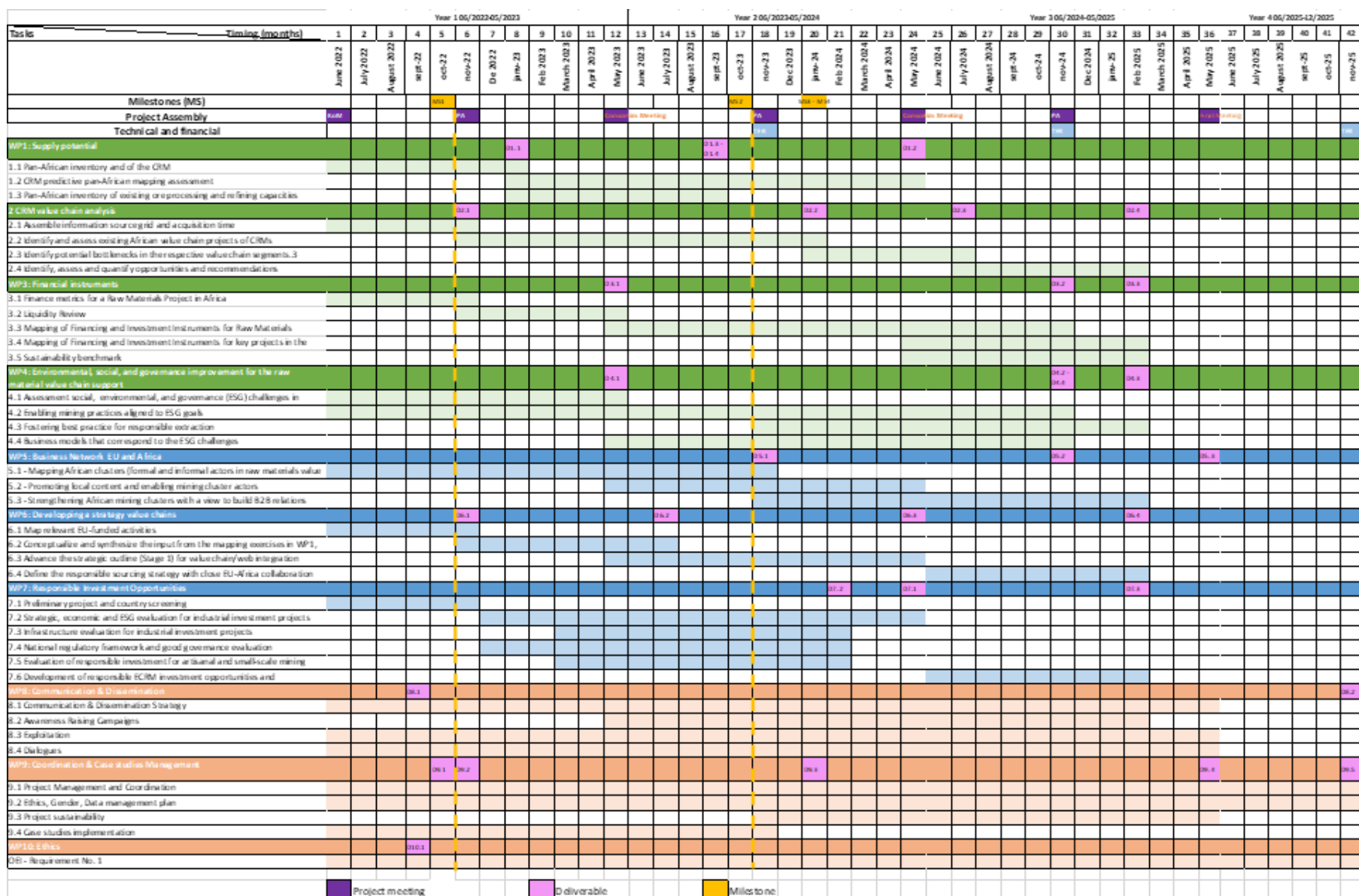
The **project management team is composed of the following experts:**

- Jean-Claude Guillaneau as main coordinator, BRGM
- Carol Zammit as vice-coordinator & Project Manager, BRGM
- Marie Vandewalle as Project Assistant, BRGM
- Carine Mazeas as Finance Officer, BRGM
- Sébastien Balech as Project Manager Officer, LGI
- Mathilde Videlo as Project Manager Officer, LGI
- Philip Schütte as participant to the coordination, BGR
- Holger Grundel as overall ASM coordinator, Levin Sources

The **team will be responsible** for the:

- implementation of the Grant Agreement and Consortium agreement (BRGM & LGI);
- effective commitment of all the partners according to the G.A. and C.A. rules and obligations (BRGM & LGI);
- organisation of 4 Consortium Committee meetings: Kick-off meeting (M1 - BRGM), 2 intermediate meetings (M12, M24 - LGI), Final meeting (M36 - BRGM)
- Organisation of four virtual Consortium Committee meetings (M6, M18, M30- BRGM and LGI)
- deliverables, milestones & reports submitted to European Commission, as the Inception Report (M5), intermediate reports (three technical and financial M18, M30, M42), the final report (M36) and the Preliminary Project Evaluation Report (M42) (BRGM & LGI);
- financial overview of the Project and inform the European Commission and Participants about the status when needed (BRGM & LGI);
- legal and contractual issues (BRGM & LGI);

Below, the GANTT for each work package, milestones, meeting and deliverables.



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To carry out these activities, the coordination team will design and disseminate dedicated tools and templates / guidelines among the partners.

- A Teams channel for sharing all the documents (draft and final documents): this channel is a collaborative platform and open to all the partners within the consortium. Dedicated channel can also be opened for some WPs on demand, with a limited access to the WPs participants, BRGM.
- A Flexx platform to ensure the follow-up of the deliverables and milestones and for sharing the final version of all the documents (templates, reports, minutes..), LGI
- Project quality process through FLEXX (validation workflow, reminders), LGI
- Dashboard for follow up progress, LGI
- Detailed workplan structuration for reporting, LGI
- Agenda - Minutes of the meetings, LGI
- Tools, rules and online videos for financial reporting, LGI
- Consortium internal reporting (every 6 months) - project progress with all the Consortium members and the Advisory Board (Teams), BRGM & LGI
- Management Committee meetings (every month) - project progress (Teams), BRGM & LGI
- Consortium Committee meetings (every year), BRGM & LGI

For a timely and smoothly coordination, the BRGM will maintain a tight interact will the leaders of the technical WPs on a regular basis, to assess the on-going process and guarantee that all the partners are in track with the Description of Actions (DoA), part of the Grant Agreement.

The coordination team will also have to interact with external institutions and collaborators such as the European Commission, the Advisory Board and the Stakeholder Network.

- organising the consultation with the AB, and taking note of and implementing their recommendations and advice to the project activities (BRGM)
- organising the consultation with the Stakeholder Network and connecting their activities to the project to ensure a sustainable network and interaction between Critical Raw Material projects thorough the whole value chain (BRGM)

For travelling and daily costs during the Consortium meetings and workshops, the coordination team had shared, at the beginning of the project, some rules (see annex 2).

For the quality process, LGI has developed a validation process as illustrated hereafter:

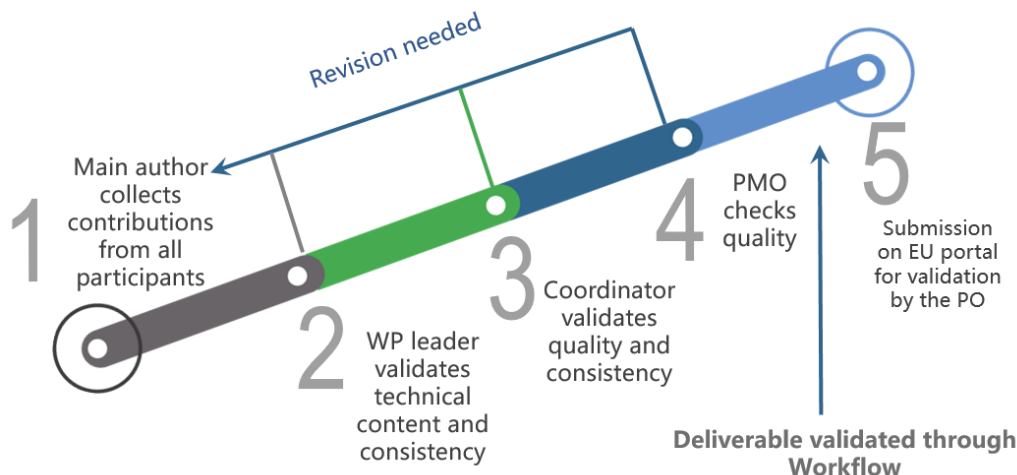


Figure 16 - Quality process

To ensure enough time to cover this process before submission to the European commission, all the reports will have to be submitted to the coordination team at least 1 month before the deadline. Except for the Inception Report contribution which has to be submitted mid-September for a submission end of October 2022, as it will be the first consortium document.

Hereafter the table of the **deliverables and their submission deadlines**, sorted by date:

Deliverable	Leader	Submission to the coordination Team	Submission to the European Commission
D8.1 Initial Dissemination, Exploitation and Communication Strategy	LGI	1 st Sept 2022	M4 – Sept 2022
D10.1 ETHICS OEI - Requirement No. 1	BRGM	Mid-Aug 2022	M4 – Sept 2022
D9.1 Inception Report : Project quality plan, case study template, detail Work Plan per WPs	LGI	1 st Sept 2022	M5 – Oct 2022
D2.1 Project fact sheets and flow analyses outlining African ECRM value chain projects-Template	DMT	1 st Nov 2022	M6 – Nov 2022
D6.1 State of Play (EU activities)	EIT RM	1 st Nov 2022	M6 – Nov 2022
D9.2 Data Management Plan	BRGM	1 st Nov 2022	M6 – Nov 2022
D1.1 INSPIRE compliant data set of Pan-African inventory of the known CRM deposits	LNEG	1 st January 2023	M8 - January 2023
D3.1 Liquidity Action Plan.	HCF	1 st May 2023	M12 – May 2023
D4.1 Report on mining regimes with respect to ESG objectives	AWIMA		M12 – May 2023
D6.2 Strategy Outline - Stage 1	EIT RM	1 st July 2023	M14 – July 2023
D1.3 Pan-African inventory of existing ore processing and refining capacities	LNEG	1 st Sept 2023	M16 – Sept 2023

D1.4 Country profiles of artisanal and small-scale ECRM mine production and processing developments	BGR	1 st Sept 2023	M16 – Sept 2023
D5.1 EU-Africa Raw Materials Networking Platform	MADI	1 st Nov 2023	M18 – Nov 2023
D9.3 Case studies report	BRGM	1 st January 2024	M20 – January 2024
D2.2 Project fact sheets and flow analyses outlining African ECRM value chain projects	DMT	1 st January 2024	M20 – January 2024
D7.2 Country profiles on the regulatory framework and the artisanal mining sector	AHK	1 st Feb 2024	M21 – Feb 2024
D1.2 Mineral exploration potential based on favourability maps	BRGM	1 st May 2024	M24 – May 2024
D6.3 Strategy Draft - Stage 2	EIT RM	1 st May 2024	M24 – May 2024
D7.1 Fact sheets on project evaluation (strategic, economic, ESG, infrastructure)	BGR	1 st May 2024	M24 – May 2024
D2.3 Analysis of potential bottlenecks for each ECRM value chain, including identification of investment opportunities	DMT	1 st July 2024	M26 – July 2024
D3.2 Funding Overview African Projects	HCF	1 st Nov 2024	M30 – Nov 2024
D4.4 Guideline on business models meeting ESG objectives	INTRAW	1 st Nov 2024	M30 – Nov 2024
D4.2 Guidelines for the implementation of a community-based ESG framework for ASSM and 'Best in Africa'-Factsheets	SSSA	1 st Nov 2024	M30 – Nov 2024
D5.2 Report on enabling mining clusters and B2B relationship building	EIT RM	1 st Nov 2024	M30 – Nov 2024
D2.4 Database and report of opportunities in the current value chains and Joint-Venture accompanied by ESG impact assessment and recommendations	DMT	1 st Feb 2025	M33 – Feb 2025
D3. CERA 4in1 ESG Performance scoring report	DMT	1 st Feb 2025	M33 – Feb 2025
D4.3 Curriculum material for in-country short courses	WRFA	1 st Feb 2025	M33 – Feb 2025
D6.4 Final strategy paper (Action Plan) - Stage 3	EIT RM	1 st Feb 2025	M33 – Feb 2025
D7.3 Summary report and recommendations on responsible investment opportunities	BGR	1 st Feb 2025	M33 – Feb 2025
D5.3 Report on enabling networking and B2B relationship building	EIT RM	1 st May 2025	M36 – May 2025
D9.4 Final Report	BRGM	1 st May 2025	M36 – May 2025

D8.2 Final Dissemination, Exploitation and Communication Strategy	LGI	1 st Nov 2025	M42 – Nov 2025
D9.5 Preliminary Project Evaluation Report	BRGM	1 st Nov 2025	M42 – Nov 2025

Two milestones are part of the WP9, and are dedicated to the country case studies. The due date of these milestones are slightly different than the date of the DoA (Description of Action) as the due date for the templates was shifted to Month 5 as discussed within the framework of the Grant Agreement. Therefore, as 12 months are allocated to the country case studies, the end of the case studies work will be on Month 17 (October 2023) instead of month 15, and the synthesis due on month 20 (January 2024). A workshop dedicated to the results of the country case study will be scheduled during the Annual Consortium Meeting on M24 (June 2024).

List of the milestones

n#	Milestone Name	WP	Lead	Means of verification	Due Date
1	Template of case studies	WP9	1 - BRGM	Template	M5
2	End of case studies	WP9	1 - BRGM	Reports at M20	M17

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Preparation and signing of the Grant Agreement	28/02/2022	30/06/2022	LGI - BRGM
Action 2: Preparation and signing of the Consortium agreement	28/02/2022	31/07/2022	LGI - BRGM
Action 3: Organisation of the KoM	01/06/2022	23-24/06/2022	BRGM
Action 4: Team Channel	01/06/2022	30/06/2022	BRGM
Action 5: Pre-financing : collection of FIF	01/06/2022	31/07/2022	BRGM
Action 6: Flexx platform	01/07/2022	31/07/2022	LGI
Action 7: Minutes of the KoM	01/07/2022	31/07/2022	LGI
Action 8: Pre-financing transfers	01/07/2022	31/07/2022	BRGM
Action 9: Detailed work plan for the Inception Report	01/07/2022	31/08/2022	LGI
Action 10: Organisation of the first Management Committee	01/08/2022	30/09/2022	LGI - BRGM
Action 11: IR synthesis, validation and submission to EC	01/08/2022	31/10/2022	LGI - BRGM
Action 12: Management Committees = every month from September 2022 onwards		26/09/2022	LGI - BRGM
Action 13: Project Assembly: virtual consortium meetings, to monitor the progress between two Annual consortium meetings (6 months after each consortium meeting)		30/11/2022	LGI - BRGM
Action 14: Consortium Meetings (once a year), early June from June 2023 onwards		30/06/2023	LGI - BRGM

2. Task 9.2 Ethics, Gender, Data management plan

Start date: M1 (June 2022) End date: M42 (November 2025)

Task Leaders: Carol Zammit (BRGM); Romain Cochery / Juliette Stephan-Perrey (BRGM).

Contributors: Sébastien Balech (LGI)

The aim of this task is mainly to implement a Data Management Plan and assess the way the data are managed and shared between partners or external parties, during the life span of the project. Ethics and gender are no longer part of this task, as the European Commission required this sensitive topic to be considered as a dedicated WP (WP10).

The Data Management Plan (DMP) will use the “Horizon Europe - Data Management Plan Template, Version 1.0, 05 May 2021” and will be implemented through the Platform Opidor (<https://dmp.opidor.fr/>).

The first version of the DMP will be completed before end of November for submission to the EC, and regularly updated (every 6 months).

The DMP Officer (Juliette Stephan-Perrey, BRGM) will interact with the Project Coordinator (Carol Zammit, BRGM) to collect the proper information and fill the document. He will have to interact with the Data Privacy Officers to ensure personal data are well protected, in compliance with the EU General Data Protection Regulation (GDPR). He will be in touch with the External Ethics advisor on a regular basis as well to ensure a smooth and appropriate follow-up of the process.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Create the DMP within OPIDOR	01/07/2022	30/11/2022	Romain Cochery (BRGM)
Action 2: Fill the DMP with proper information	01/07/2022	30/11/2022	Carol Zammit (BRGM)
Action 3: Interact with DPOs and Ethics advisor	01/07/2022	30/11/2022	Juliette Stephan-Perrey / Carol Zammit (BRGM)
Action 4: collect information from WPs regarding personal data, and security	01/07/2022	30/11/2022	Juliette Stephan-Perrey / Carol Zammit (BRGM)
Action 5: Submission of the DMP	01/11/2022	30/11/2022	Juliette Stephan-Perrey (BRGM)
Action 6: Updating the DMP V2	01/12/2022	31/05/2023	Juliette Stephan-Perrey (BRGM)
Action 7: Updating the DMP V3	01/06/2023	30/11/2023	Juliette Stephan-Perrey (BRGM)
Action 8: Updating the DMP V4	01/12/2023	31/05/2024	Juliette Stephan-Perrey (BRGM)
Action 9: Updating the DMP V5	01/06/2024	30/11/2024	Juliette Stephan-Perrey (BRGM)
Action 10: Updating the DMP V5	01/12/2024	31/05/2025	Juliette Stephan-Perrey (BRGM)
Action 11: Updating the DMP V5	01/06/2025	30/11/2025	Juliette Stephan-Perrey (BRGM)

3. Task 9.3 Project sustainability

Start date: M1 (June 2022) End date: M36 (February 2025)

Task Leaders: Frank Mugenyi (MADI)

Contributors: Jean-Claude Guillaneau (BRGM); Carol Zammit (BRGM); Philip Schütte (BGR).

The aim of this task is to prepare the future of all contacts, structures and data generated during the project in order to allow a smooth continuation of most of the actions of the project.

The sustainability will be mainly insured by African organizations in Africa. The main target is the African Mineral Development Centre (AMDC) even if this structure is currently under reform. MADI, BRGM and BGR will manage to prepare the future with the consortium members but also with the assistance of the Advisory Board.

Suggestions of actions to explore:

- Looking at potential collaboration from Member states including Institutions especially those covered by CS to ensure that some of the Activities are included in the National Planning eso where ASMs, B2B, Local Content Capacity Building are concerned;
- Identifying potential partner institution especially Financial Institution that will be involved under WP3;
- Involving AUC/AMDC - obviously this depends on the leadership at AUC/AMDC by 2025;
- Integrating/partnering with other EU funded projects such as Development Minerals (though their scope is limited to just industrial minerals and construction materials)

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Definition of the objective	01/06/2022	30/06/2023	MADI - BRGM
Action 2: Animation of the Advisory Board	01/06/2022	30/11/2025	BRGM
Action 3: Definition of a sustainability strategy	01/06/2022	30/11/2025	MADI - BRGM

4. Task 9.4 Case studies implementation

Start date: M1 (June 2022) End date: M20 (January 2024)

Task Leaders: Carol Zammit (BRGM); Laurent Bailly (BRGM); Nicolas Charles (BRGM); Anthony Pochon (BRGM).

Contributors: Philip Schütte (BGR); Gudrun Franken (BGR); Daniel de Oliveira & Maria Joao Batista (LNEG); Herman Cornelissen (DMT-KB); Frank Mugenyi & Angela Mulenga (MADI)

These case studies will help to test the overall methodology and to provide, at about the mid-term of the project, some preliminary results which will help to ameliorate the overall project management at the continental scale in Africa.

The aim of this task is to implement all the tasks of the project at a national level with ten national case studies: DRC, Senegal, Zimbabwe, Mozambique, Gabon, Namibia, Tanzania, Morocco, Madagascar and South Africa. In-depth case studies will be carry out for these countries, more

specially to collect local information for work packages 1 to 4. These countries have been selected based on their mining and refining potential and their existing close links with several EU countries and they have different mining potential, but also environmental issues and political situation.

Getting a better understanding of local mining environment will assist the project teams to compare different situation, highlight some opportunities, or enhance the whole chain highlighting solutions to bottlenecks and financial frozen systems. This will lead to add value to the WP5 to 7 to give them some materials and guidance for their B2B network, their strategy to develop the CRM dedicated to the energetic transition and at last listing the opportunities to develop activities linked to the value chain in Africa.

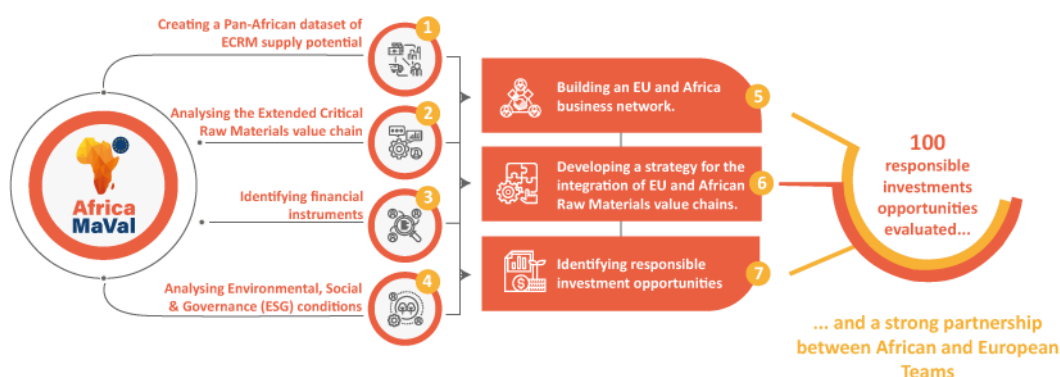


Figure 17 - Case study process

Each country case study will be granted of 200 k€ and animated for one year (from November 2022) by one of the consortium members. To carry out these activities a maximum of 120,000 out of this whole amount may be available to subcontract one or more private / public consultants. With the remaining amount of the budget allocated, the members are free to organise their activities the way it fit with their needs: they can work from their place but they can also visit their subcontractors prior or during the job.

The consortium partners will send some inputs to the leader of the case studies as soon as they can, especially for the WP 1, 2 and 3 as they linked their activities with the case studies at the very beginning of the project and should come with some results within the first 12 months. The WP4 will come back with results as well as they start their survey on the field in the 10 countries from September 2022 and will collect all the materials before end of April 2023.

The consortium partners will be able to send to the partners in charge of the case studies, part of the information they will collect for their own tasks. In the meantime, the partners in charge of the case studies will have to find a contractor to collect the additional part of the data. The sharing of the activities and the combination of the action are describe in the Case Study Template.

As all the reports have to be written in English, it will be a must to translate the final version dedicated to Portuguese / French speaking country in their proper languages.

The overall organisation and the synthesis of the ten reports will be managed by the WP9. The results of the country case studies will be presented at the M24 meeting of the project. They will allow comparison of the AfricaMaVal methodology in various environments (different key players, levels of maturity, ESG).

It's also important to keep in mind that country case studies will assist us to start to identify some investment opportunities but not only in mining activities or large scale mining activities. The whole value chain has to be screened including infrastructures and energy.



Figure 18 - Map of Africa that highlight the ten selected countries for in-depth case studies

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Definition of the CS template	01/06/2022	31/10/2022	BRGM
Action 2: Writing the ToR for subcontracting consultants (if needed)	01/09/2022	31/10/2022	BRGM, BGR, DMT, LNEG and MADI
Action 3: Selection and contracting consultants (if needed)	01/10/2022	30/11/2022	BRGM, BGR, DMT, LNEG and MADI

Action 4: Carry on the CS	01/10/2022	31/10/2023	BRGM, BGR, DMT, LNEG and MADI
Action 5: Submission of the countries CS to the coordinator and validation	01/10/2023	31/12/2023	BRGM, BGR, DMT, LNEG and MADI
Action 6: Write the synthesis and present the results	01/12/2023	31/01/2024	BRGM

5. Deliverables

Number	Title	Due Date	Responsible
D9.1	Project quality plan, case study template, detail Work Plan (Inception Report)	31/10/2022	S. Balech, M. Videlo (LGI)
D9.2	Data Management Plan	30/11/2022	C. Zammit, R. Cochery (BRGM)
D9.3	Case studies report	31/01/2024	C. Zammit, J.-C. Guillaneau (BRGM)
D9.4	Final Report	31/05/2025	J.-C. Guillaneau, C. Zammit (BRGM)
D9.5	Preliminary Project Evaluation Report	30/11/2025	J.-C. Guillaneau, C. Zammit (BRGM)

5. Milestones of WP9

Number	Title	Verification mean	Due Date	Responsible
MS1	Template of case studies	BRGM	31/10/2022	C. Zammit (BRGM)
MS2	End of case studies	BRGM	31/10/2023	C. Zammit (BRGM)

6. Interaction with other WPs

Number	Interaction description	Responsible
All WPs	Task 9.1: Project management: The coordination will interact with all WPs to ensure that all the partners are on tracks and to enhance the synergies for the project workshops and events.	BRGM
All WPs	Task 9.1: Project reporting: The coordination team will interact with BRGM, LGI all WPs for technical and financial reports	

All WPs	Task 9.2: Project Data Management Plan: interaction with all the partners involved in data collection and dissemination	BRGM
WP5	Task 9.3: Project sustainability: interaction with partners involved in BRGM, MADI the EU-Africa Raw Material Platform	
All WPs	Task 9.4: Case studies: interaction with all the partners involved in the country case studies for the template, the timeline, the coordination and the final deliverable	BRGM

7. Risks of WP9

Contractual risks (number, description, risk-mitigation), probability (L=low; M=medium, H=high) that the risk occurs and impact (L=low; M=medium, H=high) if the risk occurs. Other risks (not in GA) can be added so they can be followed during the project. Risk mitigation: P=preventive actions / C=contingency actions.

Number	Risk description	Risk mitigation	Proba	Impact
1	Pandemic risks, such as SARS-CoV-2 coronavirus (Covid-19)	Anticipating countermeasure to ensure the work continuity such as teleworking or virtual meeting. A six-month period is also planned at the end of the project for security	H	M
2	Political risks such as an unstable political situation, cabinet shuffle or attempted putsch	A continuous adaptation will be needed through proposals of the Management Committee to the EU	L	H
3	Corruption leading to fund diversion	Ensuring a full transparency of any fund used	L	L
4	Difficulties of one partner during the project execution	The case will be anticipated in the Grant and in the Consortium agreement, with reinforced support from the coordination	L	M
5	Partners poorly experienced with European projects	Support by the experienced partners	L	L
6	Insufficient stakeholder engagement at national or local level	Massive awareness raising campaigns will widely promote and strengthen the visibility and the influence of AfricaMaVal and thus highlight several attractive investment opportunities	M	M

3.10. Description of WP10 “Ethics requirements” activities

Start date: M1 (June 2022); End date: M42 (November 2025)

Work Package Leader- co-Leader: Carol Zammit, deputy-coordinator (BRGM); Juliette Stephan-Perrey, DPO animator (BRGM); Sébastien Balech as collaborator (LGI) & Anne Demoisy as external Ethics advisor (Rhizome S.A.)

This WP10 is under the lead of the Coordination Team (BRGM and LGI). As requested by the E.C., an external ethics advisor was subcontracted at the very first step of the project, in July to assist the consortium to comply with the E.C. regulation and ethics requirements, more specifically the requirements linked to personal data protection. Other ethics issues to be covered in WP10 are:

Ethics Issues	
Personal data	Yes
Non-EU countries	Yes
Environment, health and safety	Yes

The mission objectives of the subcontractor, Anne Demoisy, from Rhizome S.A. are:

- To support the AfricaMaVal’s Coordination in answering to the requirements raised by the European Commission in the 08/02/2022 Ethics Review report (ESR).
- To respond to the European Commission’s requirement of appointing an independent Ethics Advisor to ensure the details of the personal data being exported and imported to and from EU are carried out under ethical conditions. And ensure the methodology for the export and import of personal data is included in the Data Management Plan.
- To advise the Consortium about the general ethics requirement “The beneficiaries must ensure that all ethics issues related to activities in the grant are addressed in compliance with ethical principles, the applicable international and national law, and the provisions set out in the Grant Agreement. This includes the ethics issues identified in this report and any additional ethics issues that may emerge in the course of the grant.”

Hereafter, the main steps:

- The independent Ethics Advisor’s mission focuses on the definition of the ethical framework for personal data protection in collaboration with the project DPO and the partners involved in data management.
- The other ethics issues (informed consent procedures, safety issues,..) identified in the ESR will be taken in charge by AfricaMaVal internal resources, with on the fly advice by the independent Ethics Advisor.

For mid-October:

- Production of D10.1 - Ethical framework for personal data protection and processing in AfricaMaVal:
provide recommendations and guidance for the definition of General Data Protection Regulation (GDPR) compliant procedures for personal data protection and processing,

- Covering organizational procedures for personal data processing at Consortium partners site (EU and non EU countries).
 - Covering procedures for international data transfer between partners, in compliance with the General Data Protection Regulation (EU 2016/679) and the Horizon Europe ethics principles.
 - Covering technical and organisational measures implemented to safeguard the rights and freedoms of the research participants during the dissemination activities.
- Ensure the methodology for export and import of personal data is included in the initial Data Management Plan, as explicitly requested by the Ethics Screening Report (ESR).

For M24 (May 2024) and M42 (November 2025):

- Write 2 independent Ethics Advisor reports on the ethics issues monitoring and Horizon Europe compliance: these reports are submitted with the periodic reports to the European Commission and provide an independent view on how the ethics and data protection issues are monitored in the AfricaMaVal project.

Thorough the project, the external ethics advisor will support the Coordination team on ethical and data protection issues:

- On call support for specific issue.
- Participation to online monitoring meetings (internal Ethics issues monitoring group).
- Support the project during the ethics check run by the European Commission.

Actions	Start Date	Due Date	Responsible (organisation)
Action 1: Selection of an external Ethics advisor and subcontracting	01/06/2022	31/07/2022	BRGM - LGI
Action 2: Template of the D.10.1	01/08/2022	31/08/2022	Rhizome S.A.
Action 3: Write the D. 10.1	01/08/2022	30/09/2022	BRGM assisted by Rhizome S.A.
Action 4: Interaction with WP2, WP4, WP5 for Ethics guidance	01/08/2022	30/09/2022	BRGM assisted by Rhizome S.A.
Action 5: Write Information Sheets and Consent forms for WP2, WP4, WP5	01/08/2022	30/09/2022	BRGM assisted by Rhizome S.A.
Action 6: Validation & submission of the D10.1	01/10/2022	15/10/2022	BRGM assisted by Rhizome S.A. - LGI
Action 7: connection Ethics and DMP for deliverable 9.2	01/10/2022	30/11/2022	BRGM assisted by Rhizome S.A.
Action 8: global monitoring for all the WPs as needed (workshop, training, data collection, interview)	01/07/2022	30/09/2022	BRGM assisted by Rhizome S.A.

Action 9: Write 2 independent Ethics Advisor reports	01/05/2024 01/11/2025	31/05/2024 30/11/2025	Rhizome S.A. assisted by BRGM
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1. Deliverables

Number	Title	Due Date	Responsible
D10.1	OEI - Requirement No. 1	31/10/2022	C. Zammit (BRGM)

2. Interaction with other WPs

Number	Interaction description	Responsible
All WPs	The coordination will interact with each WP according to the needs (interview, data collection and data management, workshop, training)	BRGM

3. Risks of WP10

Contractual risks (number, description, risk-mitigation), probability (L=low; M=medium, H=high) that the risk occurs and impact (L=low; M=medium, H=high) if the risk occurs. Other risks (not in GA) can be added so they can be followed during the project. Risk mitigation: P=preventive actions / C=contingency actions.

Number	Risk description	Risk mitigation	Proba	Impact
1	Lack of overview by the Coordination on the ethics and data protection issues raised by the project	Set up of an Ethics and Data Protection Board as monitoring structure		nil
2	Lack of awareness by partners of the AfricaMaVal ethics and data protection procedures	Presentation on ethics and data protection will be run during relevant consortium meetings		

4. Annexes

4.1. Annex 1 – Contact Information

Contact information for the Coordinator, Scientific Coordinator, PMO, and WP Leaders are included below.

This information will necessarily evolve; as well as the updates on the collaborative web-based document management tool.

Table 4 Contact Information

Role	Name	Organisation	Email
Coordinator	Jean-Claude Guillaneau	BRGM	jc.guillaneau@brgm.fr
Vice Coordinator	Carol Zammit	BRGM	c.zammit@brgm.fr
PMO	Sébastien Balech	LGI	sebastien.balech@lgi.earth

Table 5 WP Leaders contact information

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Table 6 Beneficiaries' Contacts

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4.2. Annex 2: Mission guide

AfricaMaVal Partners

Rules applicable to travel funded in the framework of the Grant Agreement 101057832, entitled “Building EU-Africa partnerships on sustainable raw materials value chain” (AfricaMaVal)

FOR ALL THE PARTNERS

- For official meetings

1. AfricaMaVal project coordination team will organize and cover the cost accommodation during the working days, meals during the working days, and shuttles from the arrival airport (or port...) and return. The local transport to the departure airport (or port...) and return will be provided by the administration of the travelling person.

The following missions are currently planned:

- Kick-off meeting in Windhoek, Namibia (23-24 June 2022);
 - Progress meeting - May / June 2023;
 - Progress meeting – May / June 2024;
 - Final meeting - May / June 2025.
2. AfricaMaVal project coordination team will not cover the cost of flight, train, boat, etc. tickets to the mission's destination and return,
 3. No allowance will be provided.
 4. No refund of any expenditures (laundry, minibar...) borne by the travelling person will be possible. AfricaMaVal shall only be able to cover the cost of services or goods purchased directly by the project coordination team.
 5. Any exceptions to the above shall be previously authorised by the Project Coordinator.

- For Work Package meeting (for instance: Case Studies Meeting)

6. The Work Package leader will cover the cost of flight, train, boat, etc. tickets to the mission's destination and return of external guests.
7. Daily allowances will be provided by the Work Package leader to the external guests according to the EU rules listed in the project Grant Agreement started p. 17 onwards.



FOR AB MEMBERS and STAKEHOLDERS

Rules applicable to travel funded in the framework of the Grant Agreement 101057832, entitled “Building EU-Africa partnerships on sustainable raw materials value chain” (AfricaMaVal)

FOR AB MEMBERS and STAKEHOLDERS

1. AfricaMaVal project coordination team will organize and cover the cost of flight, train, boat, etc. tickets to the mission's destination and return, accommodation during the working days, meals during the working days, and local transport from the arrival airport (or port...) and return. The local transport to the departure airport (or port...) and return will be provided by the administration of the travelling person.

Travel by plane shall be in economy class, at the best economic conditions available.

The following missions are currently planned:

- Kick-off meeting in Windhoek, Namibia (23-24 June 2022);
 - Progress meeting – May / June 2023;
 - Progress meeting – May / June 2024;
 - Final meeting - May / June 2025.
2. No allowance will be provided.
 3. No refund of any expenditures (laundry, minibar...) borne by the travelling person will be possible. AfricaMaVal shall only be able to cover the cost of services or goods purchased directly by the project coordination team.
 4. Only one representative per organisation at executive level is eligible for funding.
 5. Any exceptions to the above shall be previously authorised by the Project Coordinator.

4.3. Annex 3: Annex of WP2

Project information collection template (Basic)

1. SUBJECT (numbered) <i>Guiding notes to each question are provided in italics</i> a. Numbered sub-items to be completed as part of the full info sheet	Response/ content and notes <i>Expand each section as needed to insert tables/ graphs, images, maps, etc</i>
1. Project Title/ Name	
2. Main Commodity and by-products	
3. Locality a. Country, City/Town, Village b. Describe access route to the site in words c. Coordinates d. Include locality map (+ access route and state of transport infrastructure)	
4. Ownership a. Company name b. Partnerships, JV, investors, etc. c. Contact details (include web page, if available) d. Contact details e. Web page	
5. Stage of development <i>(exploration, development, extraction, processing, recycling, abandoned, PFS, FS, etc),</i> a. Status (Operational, non-operation, Care and maintenance, on hold – state reasons if non-operational), b. Development Plans c. Licensing (e.g. legal compliance, EIA, ISO certification, ESG certification, export permits, emissions permits, etc)	
6. Geology and mineralisation potential (local) <i>(support with maps or other data as available)</i>	
7. Mineral Resources and Reserves <i>How are mineral reserves and resources stated, e.g.: NI43-101, JORC?</i> a. Production b. LoM	
8. Value chain a. Insert a value chain map/ graph / drawing of this mineral in its current use and market b. Taken from exploration to finished product, where does this project sit? (Refer to the Value Chain diagram above)	

<p>c. Describe any cross-border interactions (<i>e.g. mineral imported from elsewhere and only processed here, or exported as raw mineral from here to a processing plant elsewhere</i>)</p> <p>d. Who are the current target markets?</p>	
<p>9. Capacity/ Access and Infrastructure:</p> <p>a. Economic</p> <p>b. Policy</p> <p>c. Infrastructure (water, electricity, transport, etc.)</p> <p>d. Technology</p> <p>e. Skills</p> <p>f. Environment</p> <p>g. Social</p> <p>h. ESG components (Complete list under ESG Indicators)</p>	
<p>10. Opportunities for growth/development and support required</p> <p><i>(Financial, technical, skills, etc.) This is the project owner's own statement of how they see them selves participating in the market – what do they see as constraints, how do they want to grow market share, etc?</i></p>	
<p>11. References</p> <p><i>(all sources used in compiling this data – include web links and proper references to print media or other materials)</i></p>	

ESG indicators (From question 9 h) <i>For each item, indicate if the operation has this or not, and record details as appropriate</i>	Response <i>Y/N response only</i>	Details <i>(If Yes, record the details, reference, source doc or other notes)</i>
Air quality management plan (<i>Dust, GHG</i>)		
Waste management plan (<i>slurries, dump sites</i>)		
Surface water / groundwater management plan (<i>contamination, treatment, reuse</i>)		

Mine water / sump management plan (contamination, treatment, reuse)		
Noise & vibration management plan		
Non-destructive exploitation plan		
Management plan for energy and material consumption		
Biodiversity management plan (ecosystem, protected areas, species, vegetation clearance)		
Mine closure plan (land reclamation, decommissioning, remediation)		
Workplace management plan (imbalance, discrimination, inequalities)		
Social management plan (inclusion of vulnerable groups, indigenous people, human right / land defenders, social-cultural understanding / heritages; community development projects (water, infrastructure, hygiene, medical care, emergency, education), community involvement; poverty, hunger, thirst, housing)		
Land use management plan (acquisition, forced relocation)		
Management plan for high-risk areas (child labour, education, forced labour)		
Human & Resource management plan (bargaining, unions, grievance, remuneration, contracts, benefits, training, working hours and conditions)		
OHS management plan (risk and safety management plan, PPE, hazardous work, training, rehabilitation facilities, hazardous substances / work / conditions)		
Emergency response plan (medical preparedness and care, infrastructure plan (lightning, communication))		
Construction and Maintenance management plan (tailing dams, equipment, geological / (rock) mechanical failures)		
Safety and Security management plan (infrastructure plan (traffic), e.g. security plan, training for security personnel)		
Business Integrity Plan (anti-corruption and bribery, criminal machination (revenues & payments), ownership and management structures), illegal mining activities)		
Stakeholder management plan (consultation, engagement, grievance mechanism, disclosure)		
Supplier management plan (social impact (abusive practices, financial flows, site security, poverty, health problems, forced relocation, working contracts & conditions, accommodation, environmental impact (biodiversity), high risk areas (financial flows, violent conditions, child labour, forced labour))		

Information disclosure declaration

I,(full name), the registered owner/ director/ manager of(name of business) hereby declare as follows:

- I am offering the information recorded in the Project Information Collection Sheet voluntarily.

- *The information provided by me in the Project Information Sheet in support of the AfricaMaVal project is not protected in any way and does not jeopardize company intellectual property or competitive advantage.*
- *I fully understand the project information sheet that I have completed and I was given an opportunity to ask questions for clarity.*
- *The aims, methods and implications of the project activity, the nature of the participation and any benefits, risks or discomfort that might ensue have been explained to me.*
- *I understand that participation is voluntary and I have the right to refuse to participate and to withdraw my/our information, participation, samples or data at any time and without any consequences*
- *If the further work of the AfricaMaVal programme discovers unexpected or incidental findings, I choose to not be informed about these findings, unless they relate to my operation in particular.*
- *I am over 18 years of age*
- *I have not been coerced or pressured into providing any information.*

Respondent: _____

Interviewer: _____

Date: _____ Place: _____

4.4. Annex 4 : Annex of WP4

Task 4.1 - Assessment of social, environmental, and governance (ESG) challenges in mining across Africa

Guidance for Collecting Information

Introduction

This task of AfricaMaVal aims to undertake a meta-level review of the pertinent minerals policies, regulations, agreements on community engagement and consultation, land ownership and mineral rights, land-use and tenure, health and safety of workforces and communities, environmental management, and regulation across the continent, as well as the distribution/attribution and use of royalties.

This guidance document describes what data and for what purpose are to be collected. It will aid local contacts in the participating countries in this task. This task will complement country-level assessments on investment climates by other organizations and other WPs.

The below categories are indicative, as the structure of the country-specific rules and regulations may vary and may be covered by different sets of laws in each country. There may be also not so clear delimitation between different laws and policy documents.

There are also a number of questions that specifically concern Artisanal and Small-scale Mining (ASM)

It is not expected that all questions are being addressed, however, the relatively detailed questions below intend to indicate what kind of information is thought. Respondents can ignore questions for which they are not competent or to which they have no answer.

Mineral and mining policies

The overarching policy document is the African Mining Vision (African Union, 2009) and different countries will have developed their own strategic policy documents. These should be listed and summarised. Please provide information on the responsible bodies (e.g. the competent ministry) with contact information. Policy questions to address also include:

- Which laws regulate ownership and group structures?
- Are there any requirements in relation to the holding of equity in exploration and mining projects by local people e.g., is an investor required to allocate or cede shares to local owners?
- Are there any special rules or restrictions applicable to foreign investors?
- Identify any rights that the State may have e.g., does the State have any rights to equity in mining projects?
- Are there any requirements for listing on the local stock exchange?
- Are there any requirements to beneficiate/process minerals mined within the country?
- Are there any restrictions on the export of minerals?
- Are there any statutory consents required to dispose of rights to explore and mine?

- Are there any restrictions on disposals of controlling interests in entities holding exploration or mining rights?
- Are there any requirements to periodically renew mining or exploration licenses?
- Are there any special laws and policies applicable to specific commodities (e.g., diamonds, precious metals, nuclear fuel cycle elements)?
- Are there any special laws and policies applicable to artisanal and small-scale (ASM) mining?
- Are there any policy provisions aiming at licensing and formalisation of ASM stakeholders?
- How often the policies are reviewed and updated?
- Is the country signatory to any international conventions relevant to mineral extraction (e.g., Aarhus-, Basel-, London-, MARPOL-, Minamata-, UNECE Water-, or the UN Conventions on Combatting Desertification and on Biodiversity)?

Governance

Governance within the mining industry itself and that pertaining to the government-industry relationship is a key factor to ensure corporate sustainability and responsible operations. Therefore, it is of high the assessment of the legislative requirements on corporate structure, and mandatory disclosures.

- Are there any laws and measures against bribery and corruption?
- Are there any specific regulatory provisions for transparency in the mining industry?
- Has the country joined EITI, and if not, what are the reasons for not joining?
- Which types of disclosures are mandatory?
- How are the transparency and comprehensiveness of disclosures assessed?
- Are there regulations or requirements on the type of ESG performance reporting and assessment practices (self-reported performance or third party rating)?
- Are there any regulatory provisions for board independence?
- Are there any regulatory provisions aimed at considering and balancing interests of stakeholders (different from shareholders)?
- Are there regulations that reserve the Government participation into governance bodies (ie. Golden share)?
- Are there regulations that favour the participation of local communities in governance bodies?

Mining regulations

Please describe the pertinent laws on exploitation of mineral raw materials re. minerals rights, code of mining etc.

- How are exploration licenses granted, what mechanisms are applied?
- How are mining licenses granted, what mechanisms are applied?
- Are there administrative appeals in the mining law?
- What requirements exist for community and stakeholder consultation during the permitting processes?
- Are the mining codes and standards comparable to those in the EU?

- Are there assurance and verification systems in place to ensure implementation of the mining standards?
- What are the laws, policies, requirements for provisions pertaining to mine closure and remediation, including the provisions of bonds?
- What are the law and policies pertaining to mine care and maintenance?
- What are the instruments and means for monitoring regulatory compliance of mining and exploration operations?
- Are there laws, regulations, or rules in place the type of tailings storage or disposal (e.g., dewatered tailings piles, construction of tailings dams)?
- Are there any regulations on the use of mercury (Hg), specifically in ASM? What are the means of enforcement?
- Are there any regulations on wastes and residues containing Naturally Occurring Radioactive Materials (NORM), e.g. Tantalum waste, Tin slags?
- Is the regulator for NORM different from the mining or environmental regulator?
- What are the means to sanction non-compliance?
- Which organisation is responsible for monitoring regulatory compliance?
- Are there any legal requirements for the procurement of local goods and services by mining operations?

Taxation and Royalties

Policies on taxation and royalties can be decisive elements to attract or deter foreign investment, but are also important instruments to ensure that a fair share of the wealth generated by extraction remains in the source country. An important governance aspect is also, whether the respective policies and regulations are stable and predictable and are implemented in a transparent way.

- Are there special rules applicable to the taxation of exploration and mining companies?
- Is the transfer of mining rights subject to the payment of taxes?
- Are there any royalties payable to the State over and above any taxes?
- Are there restrictions on repatriating profits for foreign investors?
- What systems are in place to administrate and and manage the collection of the taxes?
- Is there a set percentage of profits that the mining sector is mandated to reinvest into the sector?
- Are there any provisions for (foreign) investors, such as tax exemptions, tax holidays, tax reductions?
- What are the regulations or systems in place for the reinvestment of taxes and mining royalties into the local mining communities, for example, reinvestment into local infrastructure enhancements (utilities, roads)?
- What are the systems in place for reinvestment of tax revenue into education of local ASM communities and promotion of better and safer mining practices?
- What are the tax/royalty rules pertaining to mines under care and maintenance?

Land-use and mineral rights

Please describe the rules and regulations with respect to land ownership and mineral rights, land-use and tenure

- Which are the relevant land-use planning and zoning regulations?
- Are maps available that clearly indicate the zoning and protected areas (see below)?
- What are the rights of the holder of an exploration right or mining right to use the surface necessary or incidental to an exploration or mining operation?
- Are there any native land titles or regulations that have implications for exploration and the mining industry?
- Are there provisions for Free Prior and Informed Consent (FPIC) when acquiring land for mining from the people.
- Is there a constitution that has an impact upon rights to prospect and mine?
- Are there restrictions in place on the use of specific equipment or heavy machinery for ecological or habitat protection reasons?
- Are there any land-use restrictions with respect to the type of mining method (e.g., open-pit vs. underground mining)?
- Are there any specific regulations that prevent or limit exploration or mining near to or in protected areas (ecological sensitive areas, nature reserves, Natura 2000 sites, cultural heritage sites, etc.)?
- Are any sites in the country inscribed on UN World Natural Heritage List?
- Are there any regulations which prevent or limit mining rights near to areas of conflict?

Environment

Please describe the pertinent environmental legislation, including how this legislation is applied and by which responsible body.

- Which are the relevant laws on the protection of biodiversity including forest protection?
- Which are the laws on wetland protection?
- If the country is a signatory to certain UN conventions pertaining to the environment (see above), how is compliance monitored and non-compliance sanctioned?
- Are there regulatory requirements to have emergency preparedness plans and response programmes in place and are these revised regularly?
- Which are the laws on air emissions to the environment (GHGs, particulates, cyanide, Hg, vapour, VOCs, dioxins, PCBs, including emerging substances such as PFAS, etc.) for operations and extractive waste management sites including tailings dams?
- Which are the laws on soil protection?
- What are the regulations for soil monitoring down stream from mining activities or around extractive waste management sites, including tailings dams re. contamination by eroded material or dust?
- Are there any policies in place on climate change resilience of operational or closed/ remediated sites?

- What are the laws and regulations for (hazardous, non-hazardous) extractive waste management (disposal, re-use)?
- Are mining operations required to periodically review their environmental and extractive waste management plans?
- Which are the policies and regulations on mine-closure and environmental remediation of closed or abandoned mines (mining legacies)?
- Are there regulatory provisions for the life-cycle management of extractive operations that cover the long-term management of extractive waste (stewardship) and community sustainability after the end of mining?
- Are there regulatory provisions the reprocessing of legacy tailings stored/disposed on site re., for instance, the creation of potentially contaminated dust or releases of contaminated effluents)?
- Are there any laws or regulations on energy consumption in mining operations?
- Are there any specific regulations related to the use of renewable energy in mining operations?

Water

Water resources management is an overarching task and relevant from both, the aspect of protection and the availability for the mining operation. In many African countries surface and groundwater resources are limited due to climatological limitation and competition between mining and drinking or irrigation water can be a limiting factor.

- What are the water resources policies of the country?
- How is competition between (prospective) users of groundwater and surface waters resolved to ensure fair use (wetland protection, irrigation rights, clean drinking water for humans and animals, processing waters, etc.)?
- What are the laws and regulations on the protection of groundwater and surface water resources?
- Are water resources included in the environmental legislation or separate?
- Which are the regulations on water emissions (acid rock drainage, heavy metals, arsenic, cyanide, radionuclides, etc.) to the environment from mine operations?
- Are there regulations or standards of practice for the environmental monitoring of aqueous emissions (e.g. dissolved constituents such as heavy metals, radionuclides, arsenic, cyanide, and pH) from extractive waste disposal sites, including tailings dams?
- Are there any regulations related to the recycling of water in mining sites?
- Are there any regulations related to wastewater disposal?

Tangible and Intangible Cultural Heritage

Extraction projects may affect sites of tangible or intangible cultural heritage, such as archaeological sites or sites of spiritual value.

- Which are the laws and policies on the protection of such cultural heritage?
- Are any sites in the country inscribed on UN World Cultural Heritage List?
- Are there laws, regulations or standards of practice for what to do should any archaeological or fossil remains be encountered during mining activities?

Societal and Community Aspects

Communities are affected by extractive operations in a wide variety of ways. There can be both, positive and negative impacts.

- Is there any legislation on the protection of information (like the EU GDPR)?
- What are the regulatory provisions, if any, for public participation in decision-finding processes, e.g. permitting, on extractive operations?
- Are there any specific regulations related to involvement of local communities in order to perceive economic benefits or incentives to mining activities?
- Are there any regulatory provisions for complaints and arbitration?
- Is there any artisanal mining and what is the percentage contribution to GDP?
- Is artisanal mining integrated into the regular economy or untaxed and unregulated?
- Are there data/statistics on jobs (primary/secondary) in the mining sector?
- Is there information on social conflicts in the mining areas?
- Are there any regulatory provisions for fostering actions that enhance social inclusion, protect the members of community involved in the artisanal mining?
- Are there any requirements or programmes to ensure awareness raising and access to information for the local community?
- Are there any regulatory provisions for indigenous workforce participation?
- Are there any regulatory or policy provisions to encourage mining companies to provide for training in local communities and to encourage their participation in related economic activities?
- Are there any regulatory provisions for the protection of the workforce's human rights?
- Are there any specific regulations related to female workforce participation (gender mainstreaming)?
- Are there any specific regulations related to the prevention of child labour?

Operational Health and Safety (OHS) and labour regulations

Protection of the health and safety of workers in the extractive industries is a continuing challenge world-wide.

- Which are the relevant OHS laws and regulations?
- Is there mining-specific OHS legislation?
- How is the OHS legislation enforced?
- What policies to foster compliance are in place?
- Which body is responsible for the implementation and supervision of this legislation?
- What is the role of trade unions in the mining industry?
- Which are the laws and regulations on the resolutions of labour conflicts, including strikes and walk-outs?
- What are the regulations and/or standards of practice or provisions to ensure in particular ASM workers' safety?

- Are there requirements and mechanisms for the education of ASM workers on better mining and processing practices, in particular also for gold mining without the use of Hg?

Public Health and Safety

Extractive operations can have significant off-site effects and impacts. To a great extent these are covered by the relevant environmental legislation, but certain aspect may be covered by other bodies of legislation.

- Which is the legislation that covers the protection of the public from emission (e.g. dust)?
- Is the mining-related traffic on public roads regulated in any specific way (e.g. road safety codes)?
- Are potentially affected stakeholders consulted and involved in the development and maintenance of emergency preparedness planning?
- Are there any requirements for public disclosure and access to information, at least for the immediate communities of the possible dangers or health impact in place (should there be e.g. dam failure or a release of contaminated dust or water into the environment, etc)?
- Are local community members monitored for potential long-term health impacts and are any specific compensation schemes in place?

4.5. Annex 5: Annex 1 for WP5

Methodology for data collection that will be adopted by MADI.

The methodology is meant to encompass both primary data and secondary data.

Primary data will be collected during the course of doing research of the descriptive type and performing surveys, whether sample surveys or census surveys, then we shall obtain primary data either through observation or through direct communication with respondents in one form or another or through personal interviews.

It can be helpful including conversations with the relevant people and bodies at different events attended (these then connect our dots between the downstream and upstream beneficiaries). This will be relied on for field data collection. Events such as Indaba and other Regional and Continental Mineral Conferences and events will be included in the survey approach.

Secondary data means data that are already available i.e., they refer to the data which have already been collected and analyzed by someone else. Secondary data may either be published data or unpublished data. Some of the published data will be available in:

- (a) various publications of the local governments and the geological surveys;
- (b) various publications of foreign governments or of international bodies and their subsidiary organisations;
- (c) technical and trade journals;
- (d) books, magazines and newspapers as reports to the public;
- (e) reports and publications of various associations connected with business and industry, banks, stock exchanges, etc.;
- (f) reports prepared by research scholars, universities, economists, etc. in different fields; and
- (g) public records and statistics, historical documents, and other sources of published information. (this would have to be verified for updating)

Qualitative Data: It refers to any data that is not numerical, or that is in the form of words, phrases, and sentences are qualitative data. These datasets are to capture the names of the miners, potential local equipment supplier, potential international equipment suppliers, addresses, persons of contact, website, buyers information, etc

Some of the commonly used methods to collect qualitative data include in-depth interviews, group discussions, documents, focus groups, etc.



Quantitative Data: These include numerical datasets, which can be analyzed with mathematical techniques. Quantitative data is collected based on scales such as nominal, interval, ratio, and ordinal. Resultantly this data could include: critical minerals, areas where they are found, number of ASMs and LSMs, number of miners (male and female), etc. The most common data collection methods for quantitative data are surveys and questionnaires, observations, structured interviews, etc.



Owing to the fact that we may as well have to lean more to the side of online data collection than physical, some of the activities could include;

- Desk research as we look out for the various chamber of mines and geological survey associations' website information.
- Zoom meetings with our fellow partners to discuss and attain their version of information on CRM.
- Attending events organized by our partners in order to acquire as much information as possible.
- Having conversations with the various local area chairpersons to attain any information relevant to CRMs. This could be conducted over face-to-face, on phone calls, or via video calls (zoom).

- Using questionnaires with the objective of learning an individual's and community's knowledge on CRMs, upstream and downstream company.
- Making use of the previous records available on the minerals and going in further to verify and update them.

4.6. Annex 6: Annex 2 of WP5

High Level Overview of Data to be Collected (to be updated during the project)

1. Africa & EU Data
 - 1.1. Country Name
 - 1.2. Country Location (southern Africa, western Africa, southern Europe...)
 - 1.3. Main CRM Value Chain (including using results from WP1)

2. Business Data
 - 2.1. Business Name
 - 2.2. Business Contact Details
 - 2.2.1. Business Email
 - 2.2.2. Business Telephone
 - 2.2.3. Business Address
 - 2.2.4. Business Website
 - 2.3. Business Contact Person
 - 2.3.1. Business Contact Person's Name
 - 2.3.2. Business Contact Person's Email
 - 2.3.3. Business Contact Person's Telephone
 - 2.3.4. Business Contact Person's Designation
 - 2.4. **Business category** - products and services (mineral producer, mineral processor, service provider, equipment provider, educational provider, research organization)
 - 2.4.1. List of products and services
 - 2.4.2. State of Products: processed, semi-processed, raw
 - 2.4.3. Type mineral(s)
 - 2.4.4. Capacity: please be precise for what?
 - 2.5. Business Size

- 2.5.1. Business Size (staff): 0-10, 11-20, Above 100
 - 2.5.1.1. No of Female.....No of Male.....
- 2.5.2. Business Capacity:
- 2.5.3. Business Age: 0-2 years, 2-5 years, 5-10 years, 10+ years
- 2.5.4. Business Registration: informal, formal, community
- 2.6. Business Target Market
 - 2.6.1. Market localization: local, regional, or international?
 - 2.6.2. Market status: have a contract agreement, MoU, or sell to anyone available?
 - 2.6.3. Market negotiation: are brokers interfering between buyer and seller?

Methodologies to collect, process, store and share Data

The procedure for subscribing and associated quality management and GDPR compliance will be done with the support of WP9 and the external ethics advisor.

- A. Information being gathered is 3 part i.e.
 - a. Information about the businesses offering products and services and those in need of products and services
 - b. Information about the business' products or services
 - c. Information about a person that can be contacted at the business
- B. Desktop Research: Refer to [GDPR](#) below
 - a. Web Scraping Publically, Open and Free Data about businesses, and relevant stakeholders (only collecting and storing information that is required for this project, informing individuals where personal data is collected at a minimal to consent for us to utilise their information, or request it to be updated, or purged)
 - b. Aggregating information that is gazetted in official publications
- C. Using tools like
 - a. Google Forms,
 - b. Survey Monkey,
 - c. Open Data Kit and
 - d. Microsoft Forms amongst others to collect data whilst abiding to [GDPR](#) in the way we structure our questionnaires depending on the audience or segment or medium we are using to reach out the intended audience.
- D. Data Processing, Data Storage, Data Sharing, Data Extraction, Transformal and Loading will be carried out on Cloud Service Providers such as Azure,

AWS, GCP and many others by so doing inheriting the Data policies and security that comes in built with these provides, selecting zones and regions to which will comply with any sensitive data we may collect or share. Access Management to data will be easier to implement, Data availability will be improved and above all Data audits will be easier to handle.

E. Data Access

- a. Raw data will be only accessed by the data subject should they want to have a copy or purge their data
- b. Data will be abstracted depending on need i.e. visualised where possible, or through reports or analysis of information

General Data Protection Regulations we Shall follow:-

The GDPR defines an array of legal terms at length. Below are some of the most important ones

1. Personal data — Personal data is any information that relates to an individual who can be directly or indirectly identified. Names and email addresses are obviously personal data. Location information, ethnicity, gender, biometric data, religious beliefs, web cookies, and political opinions can also be personal data. [Pseudonymous](#) data can also fall under the definition if it's relatively easy to ID someone from it.
2. Data processing — Any action performed on data, whether automated or manual. The examples cited in the text include collecting, recording, organizing, structuring, storing, using, erasing... so basically anything.
3. Data subject — The person whose data is processed. These are your customers or site visitors.
4. Data controller — The person who decides why and how personal data will be processed. If you're an owner or employee in your organization who handles data, this is you.
5. Data processor — A third party that processes personal data on behalf of a data controller. The GDPR has special rules for these individuals and organizations.

If you process data, you have to do so according to seven protection and accountability principles outlined in [Article 5.1-2](#):

1. Lawfulness, fairness and transparency — Processing must be lawful, fair, and transparent to the data subject.
2. Purpose limitation — You must process data for the legitimate purposes specified explicitly to the data subject when you collected it.
3. Data minimization — You should collect and process only as much data as absolutely necessary for the purposes specified.
4. Accuracy — You must keep personal data accurate and up to date.

5. Storage limitation — You may only store personally identifying data for as long as necessary for the specified purpose.
6. Integrity and confidentiality — Processing must be done in such a way as to ensure appropriate security, integrity, and confidentiality (e.g. by using encryption).
7. Accountability — The data controller is responsible for being able to demonstrate GDPR compliance with all of these principles.

Accountability

The GDPR says data controllers have to be able to demonstrate they are GDPR compliant. And this isn't something you can do after the fact: If you think you are compliant with the GDPR but can't show how, then you're not GDPR compliant. Among the ways you can do this:

- Designate data protection responsibilities to your team.
- Maintain detailed documentation of the data you're collecting, how it's used, where it's stored, which employee is responsible for it, etc.
- Train your staff and implement technical and organizational security measures.
- Have Data Processing Agreement contracts in place with third parties you contract to process data for you.
- Appoint a Data Protection Officer (though not all organizations need one — more on that in [this article](#)).

Data security

You're required to handle data securely by implementing "[appropriate technical and organizational measures](#)."

Technical measures mean anything from requiring your employees to use two-factor authentication on accounts where personal data are stored to contracting with cloud providers that use end-to-end encryption.

Organizational measures are things like staff trainings, adding a data privacy policy to your employee handbook, or limiting access to personal data to only those employees in your organization who need it.

If you have a data breach, you have 72 hours to tell the data subjects or face penalties. (This notification requirement may be waived if you use technological safeguards, such as encryption, to render data useless to an attacker.)

1. The data subject gave you specific, unambiguous consent to process the data. (e.g. They've opted in to your marketing email list.)
2. Processing is necessary to execute or to prepare to enter into a contract to which the data subject is a party. (e.g. You need to do a background check before leasing property to a prospective tenant.)

There are strict new rules about what constitutes [consent from a data subject](#) to process their information.

- Consent must be "freely given, specific, informed and unambiguous."
- Requests for consent must be "clearly distinguishable from the other matters" and presented in "clear and plain language."

- Data subjects can withdraw previously given consent whenever they want, and you have to honour their decision. You can't simply change the legal basis of the processing to one of the other justifications.
- Children can only give consent with permission from their parents and according to the law governing data collection in that country.
- You need to keep documentary evidence of consent.

4.7. Annex 7: Workshops planned

Table 7 Workshops planned

1

Organiser	Task	Date	Location	Attendees (invited)
DMT	2.1	October 2022	online	DMT, WRF + all the project partners to define the scope of secondary raw materials ECRM value chains.
DMT	2.1	October 2022	online	DMT, WRF, LevinSources, + BGR ? to determine the characteristics of the ASSM sector for a proper alignment of our approach towards ASSM value chains
DMT	2.2	tbd	online	DMT, WRF
DMT	2.3	July 2024	online	DMT, WRF : workshop presenting and discussing the result of Task 2.2 and 2.3 on the secondary raw materials country profiles
DMT	2.3	April 2024	online	DMT, WRF, Levin Sources : workshop to consider ASSM country profiles with economic linkages
DMT	2.4	March 2025	online	DMT, WRF: workshop on inclusive recycling regarding recommendations for investment opportunities in the interface between informal and formal sector
DMT	2.4	November 2024	online	DMT, BGR LevinSources: Workshop on sharing recommendations for investment opportunities in ASSM sector
BGR	WP7	February 2023	Cape Town	Open workshop for external feedback on WP7 methods, no specific invitees
BGR	WP7	February 2024	Cape Town	Open workshop for external feedback on WP7 methods or results, no specific invitees
BGR	WP9	March 2024	DRC	Local workshop for national stakeholders to present findings of country case study; note this workshop may be combined with workshop of BGR bilateral project and we have not yet decided who will take the lead
BGR	WP9	March 2024	Namibia	Local workshop for national stakeholders to present findings of country case study; note this workshop may be combined with workshop of BGR bilateral project and we have not yet decided who will take the lead
WRFA	WP4	mar 24 (tentative)	tbd	Training sessions in 2 countries (community level); participants tbd
WRFA	WP4	mai 24 (tentative)	tbd	Training sessions in 2 countries (train the trainer); participants tbd

1

WRFA	WP4	jul 24 (tentative)	tbd	Training sessions in 2 countries (community level); participants tbd
WRFA	WP4	sep 24 (tentative)	tbd	Training sessions in 2 countries (train the trainer); participants tbd
WRFA	WP4	nov 24 (tentative)	tbd	Training sessions in 2 countries (community level); participants tbd
LNEG	WP1	October 2024	online	Inspire compliant DB with BRGM
HCF	WP3	2024 ?	tbd	workshop or dialogue event with the European Commission (possibly together with EIT Raw Materials)
HCF	WP3	February 2024 ?	tbd - Cape Town?	internal workshop providing an overview of how one assesses a project from an investor / lender standpoint.
EIT RM	WP6	May - June 2023	Online or with the Annual C.M	Internal workshop with WPs on vision, target, and goal definition of the strategy in a collaborative way
EIT RM	WP6	Jan-March 2024	tbd	Strategy Workshop to define priority areas of European-African cooperation and co-creation of the strategy
WRFA	WP6	October-December 2024	Switzerland	Strategy Uptake Workshop (workshop#2) with high level stakeholders to disseminate the strategy and discuss possibilities for its uptake and implementation
LGI	WP8	June 2023	combined with Annual C.M	exploitation workshops: collect inputs from partners and feed into the Exploitation & IP repository
LGI	WP8	June 2024	combined with Annual C.M	Workshop with all project partners to co-create post-project roadmap (strategy for EU-Africa Raw Materials Networking Platform)
BRGM	WP9 -CS	June 2024	combined with Annual C.M	Workshop dedicated to the results of the 10 case studies.
BRGM	WP9 -CS	March 2024	Senegal	Local workshop for national stakeholders to present findings of country case study
BRGM	WP9 -CS	March 2024	Madagascar	Local workshop for national stakeholders to present findings of country case study
BRGM	WP9 -CS	March 2024	Gabon	Local workshop for national stakeholders to present findings of country case study
BRGM - LNEG	WP1	Autumn 2024	TBD	Colloquium of African Geology: Inspire DB for ECRM

4.8. Annex 8: References

WP1:

- Billa, M., Cassard D., Deschamps Y., Salpeteur I. Europe Mineral Resources GIS. In 33rd International Geological Congress, Oslo, August 6-14th 2008.
- Bonham-Carter, G.F., Agterberg, F.P., Wright, D.F. (1988). Integration of geological datasets for gold exploration in Nova Scotia. *Photogrammetric Engineering and Remote Sensing*, 54, 1585–1592.
- Bonham-Carter, G.F., Agterberg, F.P., Wright, D.F. (1989). Weights of evidence modelling: a new approach to mapping mineral potential. In: Agterberg, F.P., Bonham-Carter, G.F. (Eds.), *Statistical Applications in the Earth Sciences*, Paper 89-9. Geological Survey of Canada, pp. 171–183.
- Cassard, D., Tertre, F., Bertrand, G., Tellez-Arenas, A., Schjøth, F., Tulstrup, J., Heijboer, T., Vuollo, J., Čápoová, D., Šinigoj, J., Gruijters, S., Tomas, R. & Schubert, C. 2014a. The Minerals4EU Knowledge Data Platform for managing Web-based mineral resources information in Europe. *Minerals in Circular Economy Conference (MINCE)*. Espoo, Finland, 26–27 November 2014.
- Cassard, D., Tertre, F., Bertrand, G., Tellez-Arenas, A., Schjøth, F., Tulstrup J., Heijboer, T., Vuollo, J., Čápoová, D., Šinigoj, J., Požar, M., Gruijters, S., Bogaard, P., Waardenburg, F., Tomas, R. & Schubert, C. 2015. Minerals4EU - INSPIRE in Action: Pan-European Raw Materials Knowledge Base Data Platform. *INSPIRE Conference 2015*. Lisbon, Portugal, 25–29 May 2015.
- Cassard, D., Tertre, F., Tulstrup, J., Vuollo, J., Tomas, R., Čápoová, D., Šinigoj, J., Delfini C & Burlet, C. 2014b. The Minerals4EU Knowledge Data Platform: implementing INSPIRE data models in the first pan-european raw materials knowledge base. *INSPIRE Conference 2014*. Aalborg, Denmark, 16-20 June 2014.
- Fortes, C., Santana, H., de Oliveira, D.P.S., Filipe, A., Almeida, P. A., Gruijters, S., 2013, EUROGEOSOURCE - the new generation of EU mineral and energetic resources Web GIS Systems using cloud computing. *Geonovas*, nº 26, p. 3-10.
- Tourlière, B., Pakyuz-Charrier, E., Cassard, D., Barbanson, L., Gumiaux, C., 2015, Cell Based Associations: A procedure for considering scarce and mixed mineral occurrences in predictive mapping, *Computers & Geosciences*, Volume 78, pp. 53-62, <https://doi.org/10.1016/j.cageo.2015.01.012>

WP4:

- African Union (2009): African Mining Vision.- 47 p., https://au.int/sites/default/files/documents/30995-doc-africa_mining_vision_english_1.pdf.
- CIA (ny): The World Fact Book.- <https://www.cia.gov/the-world-factbook/> .-
- LEXAfrica (2019): Guide to Mining Regimes in Africa.- 86 p., <https://www.lexafrica.com/wp-content/uploads/2019/02/LEX-Africa-MINING-GUIDE-DIGITAL.pdf> (accessed 02.06.22).
- African Economic Outlook 2022, Supporting Climate Resilience and a Just Energy Transition in Africa, <https://www.afdb.org/en/knowledge/publications/african-economic-outlook>

WP5:

- Michael E. Porter: Clusters and the New Economics of Competition, November-December 1998, Harvard Business School, Boston, MA, USA

4.9. Annex 9: Case study template





Horizon Europe Framework Programme (HORIZON)

D9.1 – Template of the case studies

WP9 - Task 9.4

Date [31/10/2022]

C. Zammit¹

¹BRGM



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Abbreviations and Acronyms

Acronym	Description
WP	Work Package
ECRM	Extended Critical Raw Materials
ESG	Environmental, social and governance

Wording

Mineral prospectivity: “Mineral potential mapping is concerned with quantifying and mapping the likelihood that mineral deposits are present in a study area. It is synonymous to mineral prospectivity mapping, which is concerned with quantifying and mapping the likelihood that mineral deposits may be found by exploration in a study area.”

Executive Summary

[The executive summary should place the deliverable within the overall project context, provide an overview of the key objectives, methods of development and results of the deliverable.]

Keywords

ECRM, Mineral potential, Ore processing, Refining capacities, Recycling units, Value chain, Primary raw material, Secondary raw material, Bottlenecks, Finance, Investment, Sustainability, ESG, Land-use, Taxation, Mining regulation, Mining policies, Child labour, Responsible extraction, DRC, Senegal, Zimbabwe, Mozambique, Gabon, Namibia, Tanzania, Madagascar, Morocco, South-Africa, Pan-African

1. Extended Critical Raw Materials (ECRM) supply potential of “country”

Partners involved in the country case studies to inform and collaborate with BRGM

1.1. Inventory of the ECRM

This task will be carried out by the partners involved in the country case studies with the assistance of the BRGM and local geological survey organisations (e.g. National Geological Survey, Direction of Mines and/or Geology) subcontracted by the partners involved in case studies. A database will be delivered to the partners for the 10 country case studies by the BRGM and will be updated with the materials collected through the local geological survey organisations. This task will start in January 2023, once the WP1 Database will be available and the results will be provided the latest in April 2023.

The partners will have to collect the data with the local geological survey organisations. A simplified structure of the Inspire compliant database (DB) will be disseminated to all the partners, as a guidance to subcontract the local geological survey organisations. The BRGM can assist the partners to compare both entries (from the WP1 and the local geological survey organisations) to build their final set of data for the country case study.

1.1.1 Geological setting

The global geological setting (main domains at the country-scale) will be written by the partners with the assistance of the local geological survey organisation. The BRGM can provide guidance and geoscientific information.

1.1.2 Known Ore deposits and occurrences

The inventory of the known ore deposits and occurrences (only for those containing known ECRM as main commodity or co-/by-product) will be partly provided by the BRGM to all the partners. The other part will come from **local geological survey** organisations subcontracted by each partner. The results will be a combination of a map and a table (list of ECRM).

Main commodity	Other commodity(ies) (co- or by-product)	Deposit geology	Industrial factors <i>(Possible, planned or existing exploitation and ore processing processes and their related environmental impacts)</i>	Greenfield / Brownfield = Development stage

1.2. Prospectivity and mineral high potential mapping

This task will be carried out by the BRGM and the results will be delivered to the partners for the 10 country case studies. This task will start in January 2023, once the WP1 database will be available and the results will be provided the latest in June 2023. The BRGM will need the guidance of the partners and their **local geological survey** organisations to select some of the ECRM for which the prospectivity maps will be generated.

1.2.1 Selection of the ECRM for mineral prospectivity

Mineral prospectivity maps will be generated by the BRGM for some of the ECRM according to the country specific mineral potential (selection to be done by the partner in charge of the country case study).

1.2.2 Mineral high potential areas

Mineral high potential areas will be highlighted by the BRGM, assisted by the partners and their **local geological survey** organisations for the 10 country case studies.

1.3. Mining, ore processing and refining capacities

This task will be carried out by the BRGM assisted by **DMT** and **local subcontractors** for each 10 countries. A list will be provided as a table.

2. Assessment of the ECRM value chain

Partners involved in the country case studies have to inform and collaborate with DMT.

2.1. Characterisation of the value chain for primary and secondary raw materials

This task will be carried out by DMT and the results will be delivered to the partners for the 10 country case studies. The results will be provided the latest in June/July 2023.

2.1.1 List of the mining and recycling projects (sorted by degree of maturity)

Part of the task will be carried out by DMT and the results will be delivered to the partners for the 10 country case studies, the latest in June 2023. The other part of the information should be provided by a local subcontractor, more especially for recycling projects and their degree of maturity (e.g. no available recycling loop, R&D stage, pilot stage, industrial stage, and precising the nature of what is recycled). The detailed list will be added as an appendix.

2.1.2 Existing ESG indicators

DMT and AWIMA will provide ESG indicators for primary and especially secondary raw materials for the 10 countries, the latest in July 2023.

2.1.3 Status of economic links between the formal and informal sectors

DMT will provide this analysis, assisted by the BGR and Levin Sources for the artisanal and small scale-mining (ASSM) sector (inputs from task 7.5). A local subcontractor might be needed to get a better understanding of the informal sector, especially the ASSM one.

2.2. Identification of the bottlenecks along the value chain

DMT will provide part of the information for the 10 countries. The other part should be provided by a local subcontractor, the latest in June/July 2023.

2.2.1 List of the main bottlenecks and the links between them

Both information from DMT and the local subcontractor will be combined to the World Bank “Worldwide Governance Indicators (WGI)” (<http://info.worldbank.org/governance/wgi/>) as “Government Effectiveness & Control of Corruption” + Logistics Performance Index (LPI) (<https://lpi.worldbank.org>) + studies from the Fraser Institute (<https://www.fraserinstitute.org/studies/annual-survey-of-mining-companies-2021>).

2.3. Investment opportunities

DMT might suggest some opportunities. A local subcontractor could come with additional information.

3. Investment/financing prospects for ECRM projects in the "country"

Partners involved in the country case studies have to inform and collaborate with **HCF**.

[Note that we would recommend asking these entities for what they could provide (i.e. scope of work) so that we can assess whether this covers all topics raised below or whether we need additional consultants to provide further information]

3.1. Fiscal, legislative and regulatory context for in-country financings

[Topics to be covered from chapter 4 (to be confirmed by AWIMA)]:

- Existence of a mining code (Is there a mining code in place? How long has it been in place? Has it been followed to date? Are there any discussions about a future update?);
- Incentives for mining and processing (royalty rates, tax exemptions, etc.);
- Authorisation requirements and process (time, costs, nature and degree of requirements, especially in relation to international standards);
- Income tax (tax rate and exemptions, interest deductibility);
- Labour and Environmental & Social (E&S) laws (Has the country committed to international regulations in terms of human rights and labour laws? What are the local procurement rules and would it be easy to meet those?).

[Other topics that should be covered here which could affect an investment into a project (and the payment of dividends), a loan to a project company and the servicing of that loan a stream]:

- Convertibility, transfer (Can a company easily convert local currency into hard currency? Can a company transfer funds abroad? Are there any costs involved in the process? Is there a requirement to repatriate funds in-country?);
- Interest and dividend to Withholding tax (WHT) (Is interest subject to a WHT? Is dividend subject to a WHT? Which double taxation agreements allow WHT to be reduced to 0%?);
- Thin cap rules and interest deductibility (Are shareholder loans allowed? Is there a restriction on the amount of interest that can be deductible?);
- Foreign/local currency accounts (offshore/onshore) (Can the company hold offshore accounts? Can the company hold onshore accounts in hard currency?);
- Arbitration (Is international arbitration allowed? Is there any local arbitration available? How is it enforced?).

*[Note to BRGM - From discussions with **AHK** on 17 Oct., this is their remit. Otherwise would recommend using one of the **big 4 audit firms (Deloitte, EY, PwC, KPMG)** to provide a detailed overview of these, per country. To first*

provide scope of work and outline of report for consideration. Note that we may find a law firm more detailed and more country-specific and with an all-round approach compared to an accounting firm.]

3.2. Macroeconomic context for in-country financings

[Provide an overview of historical and projected data and their underlying fundamentals covering:

- GDP and its breakdown by major sector/source of GDP – any potential risk there: over-reliance on one sector, future outlook?;
- FDI. Has the flow of FDI been steady? Are there any impediments to FDI? What is the outlook on FDI?;
- FX and inflation. Historical volatility in FX and inflation. What is the current monetary policy of the said country? What is the outlook in terms of FX and inflation?;
- Sovereign debt. Is the country expected to default on its debt? How much does it represent of its GDP? (Statista <https://www.statista.com/statistics/1223393/national-debt-in-relation-to-gdp-in-sub-saharan-africa-by-country/>, Moody's, Fitch, S&P);
- Regional economic alliances/uniform regulatory, accounting, legal frameworks as these may facilitate trade and foster a business-friendly environment;
- Restrictions on imports/exports and overview of time and costs relating to customs clearance.

Would recommend economists to provide such an overview. Would recommend entities such as African Development Bank-AfDB (See

https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Analyse_de_la_politique_commerciale_du_Maroc_Volume_2_Anglais.pdf or <https://www.afdb.org/en/countries/north-africa/morocco/morocco-economic-outlook>, or reports from Economic Intelligence-EIU <https://country.eiu.com/morocco>, World Bank <https://www.worldbank.org/en/country/morocco/publication/economic-update-april-2022>, <https://tradingeconomics.com/morocco/indicators>, <https://tradingeconomics.com/morocco/indicators>].

Trading

Economics

3.3. Political context for in-country financings

[Provide an overview of the political context especially as it may shape the financing and restrict financing/investment options including]:

- Ownership requirements (nationals, government, local trusts ownership (BEE angle for SA)). Is it free carry?;
- Country's position in the international arena – involvement in regional treaties, compliance with certain standards (ILO, EITI), sanctions;
- Situation on the ground and outlook: Expropriation, looming elections, strikes, civil war, sentiment for/against mining in country.

Would recommend some of the political risk analysts such as Control Risk (offices in Johannesburg, Nairobi, Lagos – Check: Wayne Malgas) or Africa Risk Consulting (on LinkedIn they have offices in Johannesburg and in Abidjan). To first provide scope of work and outline of report for consideration as they may be able to cover other topics in 3.2.]

4. Assessment of social, environmental, and governance challenges

Partners involved in the country case studies have to inform and collaborate with AWIMA.

4.1. Country-level assessment and context

AWIMA will carry out the field work in the 10 case countries from September 2022 to February 2023. The CS will benefit from these surveys, the latest in May 2023. A local subcontractor might be needed for a better understanding of the regulations/taxations per commodity and to highlight the gap between theory and reality. NGOs publications should be screened to get another overview at these indicators.

4.1.1. Context

4.1.2. Mineral/mining policies, industry policies

4.1.3. Mining regulations

4.1.4. Taxation and royalties

4.1.4. Land-use and mineral rights

4.1.5. Environment

4.1.6. Societal and community aspects, cultural heritage

4.1.7. Public health and safety

4.2. Mining practices vs. Environmental, Social and Governance (ESG) goals

AWIMA will provide all the information for the 10 countries, the latest in May 2023.

4.2.1 Environmental challenges

Biodiversity loss, land degradation: AWIMA will provide all the information for the 10 countries, the latest in May 2023.

4.2.2 Socio-economic issues

Influx of outside workers, gender balance, child labour: AWIMA will provide all the information for the 10 countries, the latest in May 2023.

4.2.3 What would be the best practices for a responsible mining?

AWIMA will provide all the information for the 10 countries, the latest in May 2023.

5. Business network between the European Union and “country”

Lead: **MADI**.

5.1. Assessment of the upstream and downstream business ecosystem

MADI will provide part of the information. The other part should be provided by the country EU delegations and Country Embassies. **EIT RM** should be able to come with some valuable inputs from their network.

5.1.1 Context, formal and informal players

5.1.2 Relationships at local or regional levels

5.1.3 Overview of the local or regional clusters

5.2. Building new B2B relations

Option 1: **MADI** and/or the partner in charge of the country case study is encouraged to organise a workshop almost at the end of the study (i.e. September 2023). A **local subcontractor** can assist/support the partner for logistics (e.g. catering service, conference room, translation, etc.). EU delegations, Embassies, Chamber & Ministry of Mines and private operators should be invited to this event. The workshop could be a technical meeting, according to the expectation of **MADI** on this point.

Option 2: the partner in charge of the country case study will go through EU delegations, Embassies, Chamber & Ministry of Mines and private operators/**local subcontractor** to collect the proper information in order to reply to the questions detailed hereafter.

5.2.1 Promoting local content and enabling mining cluster actors

MADI and/or the partner during a dedicated workshop in the country.

To improve the framework conditions for European and African companies and organisations to co-create new value, businesses, products and services by transforming the ways they interact. It aims to introduce a new set of sweeping measures. **A local subcontractor** will collect the information as listed below:

- **List of relevant institutions for each country described in the case studies, for the development of an Africa-focused critical minerals network** (considering the technological,

environmental, economic and social dimensions) bringing together research, academia, industry and governmental stakeholders, to facilitate international collaboration;

- **List of geoscience/mining related accredited education and training programmes in the country** with relevant information on their programmes and courses;

- **List of relevant organisations across the African continent** and in Europe to host interns and apprentices with upstream and downstream players in the extractive industry.

5.2.1 Strengthening African mining clusters

MADI and/or the partner during a dedicated workshop in the country. **A local subcontractor** will collect the information listed below:

- **Existing alternative financing models** (e.g. micro-credit or crowdfunding);

- **List of the upstream and downstream companies** to contribute to a special basket fund (Corporate Social Investment fund) for funding training and networking activities.

6. Energy and digital transition: develop a strategy for the EU and Africa Partnership

Partners involved in the country case studies have to inform and collaborate with **EIT RM**.

Ideally, the strategy should be built up on the base of the work done in prior chapters. **A local subcontractor** will provide the information below, the latest in July 2023:

- List of partnerships/projects: ongoing EU-funded, African, national public funded innovation, education, cooperation, upscaling, capacity building projects (projects/partnerships dealing with responsible sourcing, CRM, with synergies to the objectives or approaches to AfricaMaVal project);
- List of the existing platforms and networks active in the studied country. Description if the country has already established/existing partnerships in Europe or on any other continent and how are they characterised (stakeholders involved for which purposes);
- Country's strategy to achieve responsible sourcing, known roadmaps, plans, etc. How do these match the needs of the twin transition? How is responsible sourcing national strategy to support national goals? Where are the biggest opportunities in a general way, to be then deeper described in the next chapter? What are the main strategic focus areas for each country case? Where does the focus lie in the CRM value chain? For instance, national strategy, road map from ministries or national agencies;

- What are the targets and goals set in the country's national context, out of those and prior chapters, where are the **challenges, risks, and opportunities** to establish a European-African Partnership? Where do these partnerships could play a role to enable responsible sourcing? (For instance, a specific region, specific focus in value chain, supporting infrastructures);
- Recommendations to built up the EU Partnership with the studied country.

Possible stakeholders/information sources to be contacted: chambers of commerce and industry dealing with minerals and CRM value chains, international agencies for cooperation and development (GIZ, AFD, etc.), ministries, national agencies, professional association of industries, official websites, EU delegations, other stakeholders linked/identified with work on other chapter such as 2.2 3.3, 4, 5.1 and 5.2.

7. Opportunities for responsible investments

For this task, the **partners involved in the country case studies**, including their **subcontractors**, where applicable, will develop a short list of local industrial exploration or mining projects as input into WP7. At the same time, certain WP7 tasks will provide input information into the country case studies.

7.1. Proposal of projects to be presented as fact sheets in WP7

Partners involved in the country case studies have to inform and collaborate with **BGR**.

7.1.1 Identification of individual exploration, mining and refining projects

Partners involved in the country case studies and their local subcontractors, if applicable, shall identify eight priority projects in the country related to the exploration, mining or refining of ECRM. To this end, local subcontractors shall be requested to identify eight suitable projects while the country case study partner shall then be responsible to verify the political appropriateness of these projects (e.g. exclude highly controversial projects or controversial stakeholders/owners). Alternatively, if no local subcontractor is involved, all tasks may be handled by the country case study partner.

From this shortlist of projects, the BGR will, in consultation with the country case study partner, select a number of projects for presentation as project fact sheets in AfricaMaVal Task 7.2. Subsequently, the BGR will compile and evaluate information on the economics and ESG character of the selected projects. It is not necessary for the country case study partner to perform these evaluations by themselves.

Each project to be proposed shall fulfil the following minimum requirements. In case it is not possible to identify eight suitable projects fulfilling these requirements, the country case study partner shall contact the BGR for the discussion of feasible implementation options. The country case study partners may always propose more than eight suitable projects, if desired.

Project minimum requirements:

1. **Credible ECRM resource estimate available** (note: the project does not necessarily have to be very big, but it is important to demonstrate that the ECRM resources have been determined in a credible and reliable way);
2. **Sufficient availability of credible project-specific information on economics and ESG features.** This typically refers to studies such as scoping studies, preliminary economic assessments, pre-feasibility and feasibility studies (JORC, NI43-101, PERC, SAMREC, CIM, SME, etc.-compliant as far as possible), environmental and social impact assessments, permit details and supporting documents, company reports containing project-specific information, credible internal reports (that may not be published) or credible third party reports (e.g., independent audits). The information must be available to be later on shared with the BGR for the development of a project fact sheet. Confidentiality of certain data may be arranged, when required;
3. **The project operator is seeking investment or financing.** Note this may refer to project development, project expansion, or optimising certain aspects of a project (e.g. to improve ESG performance);
4. **Part of the project's current or anticipated future ECRM production is potentially available to the EU industry.** Projects where owners or offtake partners exclusively direct the large majority of project ECRM production to third countries outside of the EU may not be considered.

Projects meeting these requirements shall be documented in a shortlist comprising at least the following project-specific information: project name, operator, major owner(s), main commodity and co-/by-products, administrative address and geographic location (precise and verified geographic coordinates), project development stage, project status, ore resources (and reserves, when available), detailed list of all available information (full report references), and comments/recommendations by the country case study partner.

7.2. Regulatory and ASM sector country profiles

7.2.1 Country profiles on regulations and good governance

As part of Task 7.4 in WP7, the AHK shall prepare country profiles on the national regulatory and good governance framework from the perspective of a mining sector investor. These profiles, or a preliminary draft of these, shall be made available to partners upon request for inclusion in the country case studies.

7.2.2 Country profiles on ASM sector developments and investment

As part of Task 7.5 in WP7, Levin Sources shall prepare country profiles on the national ASM ECRM sector and associated investment opportunities. These profiles, or a preliminary draft of these, shall be made available to partners upon request for inclusion in the country case studies. This information will be supplemented upon request by the country-specific information on the geology, mining and processing environment of the national ASM ECRM sector compiled by the BGR as part of Task 1.3.

Conclusions

References

Blengini, G.A., Latunussa, C.E.L., Eynard, U., Torres de Matos, C., Wittmer, D., Georgitzikis, K., Pavel, C., Carrara, S., Mancini, L., Unguru, M., Blagoeva, D., Mathieux, F., Pennington, D., 2020. Study on the EU's list of Critical Raw Materials (2020). Final report. European Commission, ISBN 978-92-76-21049-8, doi: 10.2873/11619, 158 p.

Kaufmann D., Kraay A., Mastruzzi M., 2010. The Worldwide Governance Indicators: Methodology and Analytical Issues. World Bank Policy Research Working Paper 5430.

Arvis et al., 2018. Connecting to Compete 2018. Trade Logistics in the Global Economy. The Logistics Performance Index and Its Indicators. The International Bank for Reconstruction and Development/The World Bank, 82 p.

Carranza E. J. M., 2017. Natural resources research publications on geochemical anomaly and mineral potential mapping, and introduction to the special issue of papers in these fields. *Natural Resources Research* 26(4), 379-410.



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