MICA Mineral Intelligence Capacity Analysis

WP5 RECAPITULATION

WP 5

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WP5 Workshop – MICA Consortium Meeting

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OBJECTIVES

- Planning and policy making tool not only needs to describe the status quo, but also to take into account possible futures.
- WP5 attempts to deconvolute this complex context.
- WP5 will also develop tools to address the dimension of time for the assessment of supply of and demand for (mineral) raw materials in the EU.
- WP5 aims to integrating mineral (and related) policy aspects and development scenarios on world-wide scale.
- Within the wider context of sustainable development policies WP5 will take an appropriate long-term view when developing foresight scenarios.
- The outputs will inform WP2, WP4, and WP6.

STRUCTURE

- WP5 is subdivided into three tasks that each have a deliverable associated with it:
- **Task 5.1**: Assessment of elements of RMI and their relevance for mineral policy development
  Task Leader MinPol, Contributors BGS, FG-ISI, GEUS, LPRC, NTNU, UCL
- **Task 5.2**: Development of strategic raw materials intelligence approaches
  Task Leader LPRC, Contributors BGS, FG-ISI, GEUS, UCL
- **Task 5.3**: Implementation of RMI in Europe and its wider context
  Task Leader MinPol, Contributors BGS, FG-ISI, UCL

TASK 5.1 - 1

- Investigates, which minimum set of tools/methods are needed to develop a coherent and comprehensive mineral policy framework.
- A RMI-MATRIX will be developed, correlating methods, policy objectives, actual policies, and governance paradigms.
- The assessment focuses on strategic, long-term planning tools, operative tools being treated in WP4.
- There is a lack of European strategic foresight knowledge in the raw materials domain.
- Task 5.1, therefore, will investigate, which are the key functions of RMI in minerals policies and which methods and tools can be used (by which stakeholders).

TASK 5.1 - 2

- Key aspects of mineral policies include:

(a) clear definition of scope (primary, secondary, etc. minerals

(b) commitment to provide an appropriate materials regulatory and knowledge framework;

(c) harmonisation between sectoral policies bearing on sustainable resource management;

(d) appropriate supply and demand scenarios, including the feedback from corresponding (mineral) policies;

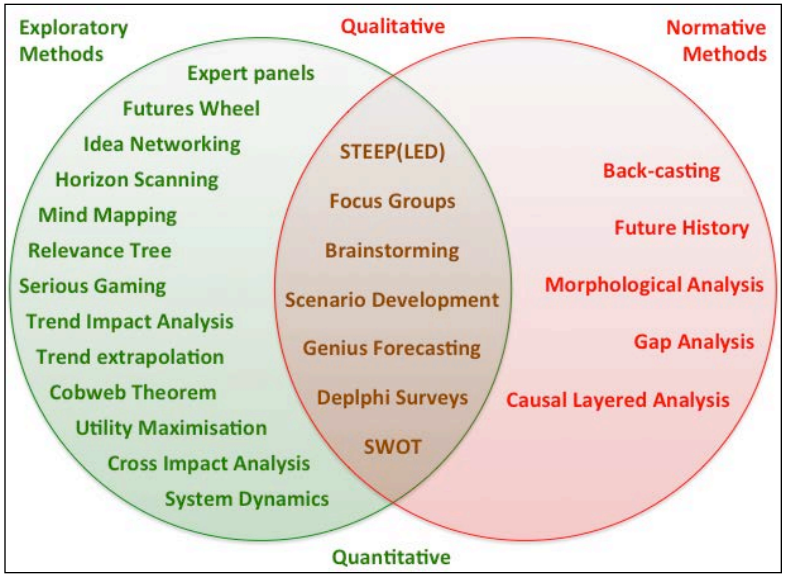
(e) SWOT analysis of policy and regulatory options;

(f) monitoring the effectiveness and impact of regulations and policies;

(g) monitoring the status of mineral deposits of public importance (c.f. MINATURA2020);

TASK 5.1 - STATUS

- The outline of D5.1 has been developed and submitted to partners for comments
- A catalogue of foresight methods has been compiled – also with a view of developing Fact-Sheets for WP6
- A collation of relevant policies at international level has been initiated.



- A model for RM foresight and intelligence is being developed against which actual undertakings in the MSs will be benchmarked
- The RMI-Matrix will be started soon

TASK 5.2 - 1

- Aim is to develop recommendations for European raw materials foresight approaches
- The purposes and the methods to be reviewed will be largely qualitative.
- Recommendations for dedicated raw materials foresight approaches will address longer time-frames (2030/2050) and potentially emerging scenarios.
- Outputs will provide tools to support RMI for longer-term policy making.
- The implementation tools will be reviewed, and guidelines will be worked out for conducting and evaluating the foresight.
- A demonstration foresight exercise will be conducted with a dual objective: i) provide support for the formulation of policies in Task 5.3 and ii) review, evaluate and create final recommendations for the use of methods.

TASK 5.2 - 2

- The following subtasks are envisaged (correlation with WP2 and WP4 needed):
- 5.2.1 - Logframe definition
- 5.2.2 - Understanding the different purposes of a RMI foresight
- 5.2.3 - Benchmarks and best practices
- 5.2.4 - Methodology Catalogue
- 5.2.5 – Detailed methodology assessment
- 5.2.6 – Pilot workshop
- 5.2.7 – Recommendation

- The outcomes enable stakeholders to conduct foresight exercises in order to:

1) increase Europe's capacities for a timely response to anticipated scenarios of future raw material challenges;

2) identify the major trends, uncertainties, key decision points, driving forces, needs for future research

3) formulate ideas for possible future actions..

TASK 5.2 - STATUS

- A review of foresight methods both for the D5.1 and the foresight methods catalogue has been undertaken;
- A pool of studies collected and screened for the most relevant ones in terms of foresight methods applications;
- An inventory of relevant international study cases on raw materials foresight was developed;
- Comprehensive approach on how these international study cases considered and applied foresight methods, in terms of suitability, supporting its purposes.

TASK 5.2 - STATUS

- Pool of 30 international Foresight case studies – desk research based on keywords search (Foresight, Raw Materials..)

Pool of international Foresight case studies

	Title	Year	Authors
1	Australia Minerals Futures Collaboration Cluster	2013	CSIRO/MFCC
2	Advantage AUS - Resource Governance and innovation for the Asian Century	2013	U. Sydney
3	Mining & Metals in a Sustainable World 2050	2015	WEF/BCG
4	Foresight as a tool for sustainable development in natural resources: The case of mineral extraction in Afghanistan	2014	Sheraz, U.
5	Resourcing the Future: Using Foresight in Resource Governance	2012	U. Sydney
6	Mining & Metals Scenarios to 2030	2009	WEF/McKinsey
7	Vision 2040 - Global scenarios for the oil and gas industry	2014	Deloitte
8	Alternative scenarios for the American Mining and Minerals industry	2001	US MMSD Scenarios Work group
9	Envisioning the Future of Mining	2009	IBM
10	Foresight Mining and Metallurgy Report	2000	DACST/South Africa
11	A vision for mining & minerals: applying CLA and art	2011	
12	Global Foresight and Local Strategy Roadmapping for the development of the Rare Earth Industry in Brazil	2014	PUC Rio
13	Minerals 4EU - Developments on the Raw Materials Market	2015	BGR
14	Priorities and innovative technologies of waste management resulting from hard coal mining,	2011	IMBiGS/Poland

	Title	Year	Authors
15	Resources Futures	2012	Chatham House
16	Breakthrough Technologies: for the security of supply of critical minerals and metals in the EU	2010	RMSG Adhoc WG
17	The Future Availability of Natural Resources: A New	2014	WEF
18	African Futures 2050-2011	2011	ISS
19	Critical minerals for the EU economy - Foresight to 2ö30	2011	BGRM
20	Finlands Mineral Strategy 2050-2010	2010	FGS/HMV
21	Canada Energy Foresight	2012	Conference Board of Canada
22	ICSU Foresight Analysis - International Science	2011	ICSU
23	Foresight - A global infrastructure perspective	2015	KPMG
24	Africa Mining Vision	2009	African Union
25	The future of global minerals and metals sector: issues and challenges out to 2050	2012	BGS
26	Mining Futures: Beyond the Headlines	2010	Sheraz, U.
27	Critical metals for future sustainable technologies and their recycling potential	2009	Őko-Institut

TASK 5.2 - STATUS

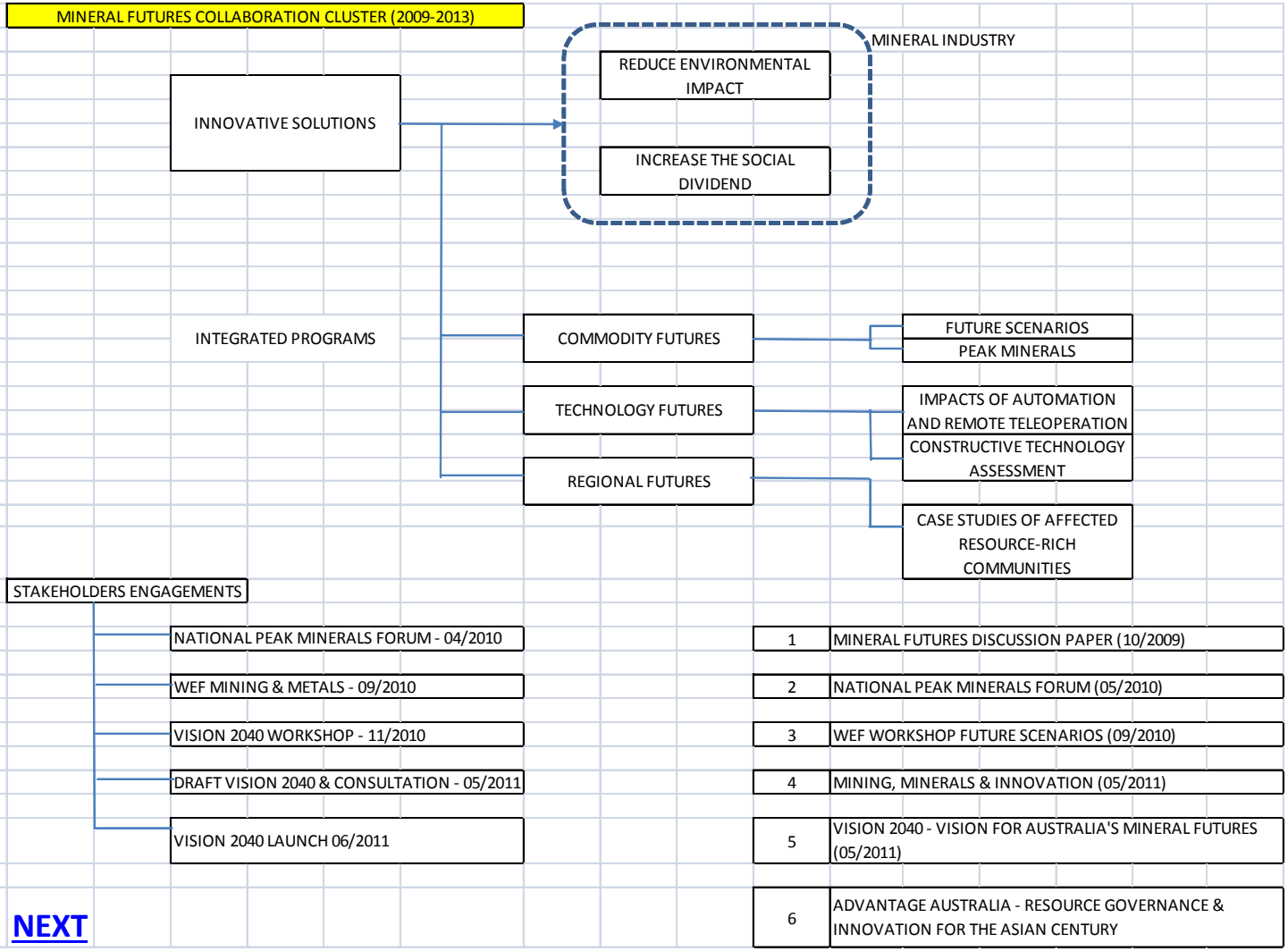
- Pool of case studies narrowed down to a final Inventory (12, in function of how Foresight was applied) with more details (methods, tools used ...)

INTERNATIONAL FORESIGHT CASE STUDIES - RAW MATERIALS (Final Inventory)

Title (Link)	Country/Authors	Year	Main Goals	Context/Background	Core Methods	Additional Tools
Vision 2040 - Mineral Futures Collaboration Cluster	Australia/CSIRO	2009-13	Innovative Solutions to Reduce Environmental Impact & Increase Social Dividend @ Mineral Industry	Rapid Demand Growth - New Pressures / Australia's role as a supplier / Rise of Mega City Regions / Anticipating Change	Future Scenarios (Workshop over WEF 2009 Scenarios)	Technology Roadmaps / MFA / Trend Analysis
Resourcing the Future: Using Foresight in Resource Governance	Australia / U. Sydney	2012	To facilitate a conversation between mining industry stakeholders and experts on the future of the industry in Australia and to develop a shared vision of the future and recommendations for how to achieve a sustainable mining industry, contributing to a sustainable economy.	Australia's position as major global supplier threatened by a range of environmental and social issues associated with traditional modes of minerals production, putting at stake countries' ability to meet future demands.	Scenarios Development	CLA / Desktop Research / (Survey)
The Vision 2040: Innovation in Mining and Minerals Forum.	Australia / CSIRO	2011	Opportunity for mining stakeholders to explore and analyse plausible future scenarios as input to developing a preferred vision, in line with the 'iterative backcasting' approach	Vision 2040 is part of Commodity Futures stream in a broader program of research supported by the CSIRO Mineral Futures Collaboration Cluster, bringing together stakeholders to develop key elements of a shared vision for Australia's mining and minerals future	Scenario Development / Backcasting	Futures Wheel / Art Analysis / CLA / Futures Triangle
Mining & Metals in a Sustainable World 2050	WEF / BCG	2015	Framework supporting major transitions shaping the industry value chain, adjusting critical questions to a more sustainable world	Financial Crisis / More sustainable operations / SD Goals Agenda (UN) / Uncertainties	Scenarios Development	
Foresight as a tool for sustainable development in natural resources: the case of mineral extraction in Afghanistan	Pakistan / Sheraz, U.	2014	Realize the mineral potential efficiently, equitably and use It as means of effective socio-economic deveopment and prosperity.	Recent mineral wealth discovered / China as an ally / Production in the vicinities of consumption	CLA / Scenario Development	
Mining & Metals Scenarios to 2030	WEF / McKinsey	2009	Stimulate dialogue / Provide multidisciplinary perspective insights / context for stakeholders to share their perspectives / Provide tools for decision making and collaborative actions	Financial Crisis / Ever-increasing Globalization / Environmental&Climate Challenges	Scenarios Development	Brainstorming
Vision 2040 - Global Scenarios for the Oil & Gas Industry	Deloitte	2014	Brazilian Industry to realize its full potential - pitching the technical and logistical challenges of the pre-salt exploration against global economic, social and geopolitical factors influencing Oil&Gas Industry	Pre-salt exploration /Higher Energy Demand / Increased Costs of oil extraction	Scenarios Development	
Alternative Scenarios for the North American Mining & Minerals Industry	US / Scenarios Work Group	2001	Asses global mining & minerals in terms of transition to sustainable development / Identify how and if the services provided can be delivered in accordance with sustainable development / Propose key elements for an action plan / Build a platform of analysis and engagement for ongoing cooperation and networking between stakeholders	Disconnection between practices and values of todays society leading to concerns over the Social License to Operate	Scenarios Development / Backcasting	Brainstorming

TASK 5.2 - STATUS

- Structured general description of the case studies (sample)



TASK 5.3 - 1

- The RMI status quo in Europe, how it influences the mineral policy development will be analysed
- The RMI-MATRIX for EU-countries will be screened for the methods and tools employed by different stakeholders and any gaps identified.
- Methods for correlating and transposing information from country reports will be developed for each EU member state.
- Task 5.3 will analyse the feedback of the contextualisation by WTO, WB, etc. on EU policy development.
- Task 5.3 will map out for MSs
  - which functions (foresight, regulatory, supervisory, research, etc.) are assigned to which authority;
  - how the interactions between the different authorities are played out;
  - whether these interactions result in synergistic or antagonistic effects.

TASK 5.3 - 2

- Social licensing and the related governance paradigms and provisions (e.g. national planning regulations, UN conventions, EU directives) will have a major impact on the implementation of mineral (and related) policies.
- Together with WP2 Task 5.3 will analyse the impact the stakeholder may have on mineral policy development.
- This Task has not yet commenced

TIME-LINE

- Task 5.1:
  - D5.1: RMI tools and methods (02/17)
  - D5.2: Development and application of the RMI-MATRIX (08/17)
- Task 5.2:
  - D5.3 Foresight Logframe (02/17)
  - D5.4 Pilot Foresight (08/17)
  - D5.5 Raw materials Foresight Guide (08/17)
- Task 5.3:
  - D5.6 RMI implementation status quo and needs in EU-28 (12/17)

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THANK YOU VERY MUCH FOR YOUR ATTENTION !

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