

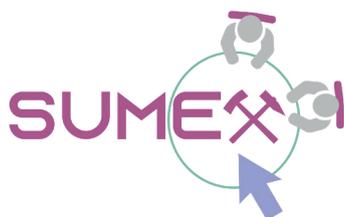
TRANSITION TOWARDS SUSTAINABILITY IN THE EXTRACTIVES SECTOR

Setting the stage to identifying good
practices and developing a community of
practitioners



Policy brief #2

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Fostering a transition towards sustainability in the extractives sector is at the core of the SUMEX project. This policy brief summarises how SUMEX is assessing practices and their relevance for a transition towards sustainability in the extractives sector, alongside SUMEX's five focus areas – permitting, environmental and social impact assessments, land use, health & safety and reporting – through the analysis of tensions and trade-offs, Leverage Points, Institutional Resource Regime, and qualitative policy analysis. All data gathered on industry and policy good practices within the extractive sector is available in the SUMEX knowledge repository.

EXISTING TENSIONS AND TRADE-OFFS

An operationalisation of sustainable development often represents an isolated and one-sided perspective of what constitutes environment, society and economy. Such an isolationist view distracts from fundamental linkages between economy, society and the environment and assumes that trade-offs across these dimensions can easily be made. This problematic is exacerbated by the conceptualisation of sustainable development that society is dependent on the environment and exists within the boundaries of the earth system (Giddings, Hopwood, & O'Brien, 2002), as well as the fact that stakeholders' norms and values sometimes often prioritise one dimension, creating tensions due to conflicts between the different dimensions (McCollum *et al.*, 2018; Purvis *et al.*, 2019). Therefore, conceptualisation and interpretations of sustainable development inevitably result in tensions between stakeholders or trade-offs among goals across the dimensions of economy, society and the environment.

Pursuing sustainability in extractive industries and balancing environmental, economic and social sustainability aspects unavoidably introduces tensions and trade-offs. These tensions and trade-offs are present across the breadth of the extractive system, as extraction activities require land, interfere with nature and impact surrounding communities. Identifying these tensions and trade-offs among stakeholders is a first step toward realising the full potential of a sustainability discourse, as well as to determining and designing transformative action. Three follow up activities are necessary to overcome the isolated view of sustainable development:

- i. identification of areas of disagreement among stakeholders, as well as the anticipation and transparency of conflicting goals across different dimensions,
- ii. application of deliberative and participatory learning approaches with societal stakeholders, and
- iii. development and deployment of mitigating measures to enable a more sustainable mineral extraction.

As part of SUMEX, a sustainability framework was developed that specifically targets the European extractive sector. The so-called SUMEX Sustainability Framework contains three main topics – i) transforming the economy (i.e., considering the Green Deal), ii) social and societal responsibility and iii) environmental sustainability – each broken down into sustainability aspects.



The primary information obtained shows that most of the tensions and trade-offs in the European extractive sector underlie the category ‘social and societal responsibility’. Topics such as land use and social acceptance cause the most tensions and trade-offs. These thematic areas can be mapped to two SUMEX sustainability aspects of the SUMEX Sustainability Framework: *“Arrangement of different land uses (spatial and temporal) and net positive impact on ecosystem services and biodiversity (incl. from indirect impacts)”* and *“Engage in continuous dialogue with stakeholders, create trusted grievance mechanisms and share investigation and problem-solving processes”*.

Tensions and trade-offs associated with the SUMEX sustainability aspect *“Arrangement of different land uses and net positive impact on ecosystem services and biodiversity (incl. from indirect impacts)”* mainly concern land-use planning and its dedication towards a certain type of use. The tensions and trade-offs related to land use are of different nature, comprising the competing land use between sectors/stakeholders, such as problems of dedicating land for extractive actions versus other uses such as residential areas. These tensions and trade-offs frequently exist between local communities and extractive companies, and between governments and extractive companies.

All tensions and trade-offs concerning the SUMEX sustainability aspect *“Engage in continuous dialogue with stakeholders, create trust grievance mechanisms and shared investigation and problem-solving processes”* are of social and societal character. The negative perception and image of the extractive industry, as well as the lack of trust and social acceptance towards the extraction of mineral raw materials, are increasingly a challenge for the European extractive industry. Furthermore, the absence of transparency and communication about future plans of companies, impacts on local communities, and the lack of understanding and unmet expectations of local populations lead to conflicts between extraction activities and communities.

It should be highlighted that a notable number of tensions and trade-offs originate from the need for mineral raw materials for green technologies (e.g. battery technologies or renewable energy provision), which matches with the SUMEX sustainability aspect *“Understanding of the role and indicators for extractives in an inclusive Green Economy that exists within Planetary Boundaries (incl. innovation for technology “jumps”, new business models, consumption patterns and “needs” considerations, linkages to other parts of the economy)”*. The area of tension and conflict here is that extractives are crucial for the transition to a more sustainable future, but the extraction itself impacts the environment and is not, strictly speaking, considered sustainable, as mineral raw materials are not renewable.

In contrast, tensions and trade-offs arising from thematic areas such as human rights violations, harmful air emissions, circular economy and recycling are scarcely mentioned in the context of the European extractive sector.



LEVERAGE POINTS AND SUSTAINABILITY ASPECTS

Leverage points are places in a system where relatively minor interventions can lead to significant changes in specific outcomes (Meadows, 1999). Donella Meadows (1999) postulated a hierarchy of 12 ‘places to intervene’ in complex systems ranging from leverage points at which interventions are easy but limited in their potential to bring about transformative change (here, termed ‘shallow’) to leverage points where interventions are challenging but have great potential to bring about transformative change (here, termed ‘deep’). The contextualisation of SUMEX sustainability aspects - which can be interpreted as stakeholder derived goals aiming for improved sustainable management of extractive land uses – within the Leverage Point framework (see **Tables 1, 2 and 3** below) shows that SUMEX sustainable development aspects are stronger aligned towards the edges of the leverage points scale, i.e., towards so-called shallow (material focused leverage points) and deep (design and (system’s) intent) focused leverage points. Leverage points related to parameters and feedback might be supportive and incrementally improve single aspects towards sustainability, while the ones based on design and system intent are pursuing more systemic levels related to the transformation of the economic system towards a green economy and respect for Planetary Boundaries.

Table 1: Examples of Sustainable Development (SD) Aspects & Leverage point interplay in the SUMEX SD dimension of ‘Transforming the Economy (i.e. Considering the Green Deal)’.

SUMEX SD Dimension: Transforming the Economy (i.e. Considering the Green Deal)	
SUMEX SD Aspect: Understanding of the role and indicators for extractives in an inclusive Green Economy that exists within Planetary Boundaries (incl. innovation for technology “jumps”, new business models, consumption patterns and “needs” considerations, linkages to other parts of the economy)	
Leverage Point	Interplay of SD Aspects & leverage point
2 Mindset & worldviews in which the system is rooted	Planetary Boundaries, Consumption patterns and “needs” considerations
3 Goal & intent of the system	Green Deal (as a new means of developing economic growth = still the old system intent is the same)
5 Rules & Institutions to build/“operationalise” the (new) system	New business models, technology jumps, linkages to other sectors of the economy (in an institutional context)
SUMEX SD Aspect: Valuing all forms of capital, i.e. natural and social capital	
Leverage Point	Interplay of SD Aspects & leverage point
2 Mindset & worldviews in which the system is rooted	Valuing all forms of capital, i.e. natural and social capital



SUMEX SD Aspect: Defining what “benefit sharing” means (beyond taxes and jobs)	
Leverage Point	Interplay of SD Aspects & leverage point
4 Power to change the rules & structure of the system (here structure means the structure of RULES)	Ways and forms of cooperation
5 Rules & Institutions to build/“operationalise” the (new) system	Defining what “benefit sharing” means (beyond taxes and jobs)
SUMEX SD Aspect: Accountability (i.e., life-cycle considerations and product labelling, various capitals, reporting)	
Leverage Point	Interplay of SD Aspects & leverage point
2 Mindset & worldviews in which the system is rooted	Various capitals
6 Structure of information flow & access to information	Reporting, life-cycle considerations and product labelling
SUMEX SD Aspect: Planning beyond the mine life (clear time horizons, after mine life use, reclamation of land towards prior or societally relevant use, extraction as an enabler for succeeding activities/livelihoods)	
Leverage Point	Interplay of SD Aspects & leverage point
5 Rules & Institutions to build/“operationalise” the (new) system	Planning beyond the mine life (operational, self-binding rules, new closure system, goals)
SUMEX SD Aspect: Holistic risk management and emergency preparedness	
Leverage Point	Interplay of SD Aspects & leverage point
5 Rules & Institutions to build/“operationalise” the (new) system	Emergency preparedness (in the context of a continuous PDCA process)
6 Structure of information flow & access to information	Holistic risk management (in the context of a continuous PDCA process)

Table 2: Sustainable development (SD) Aspects & Leverage point interplay in the SUMEX SD dimension of ‘Societal & Social Responsibility’.

SUMEX SD Dimension: Societal & Social Responsibility	
SUMEX SD Aspect: Partner with host communities and society to deliver a shared vision of the future	
Leverage Point	Interplay of SD Aspects & leverage point
4 Power to change the rules & structure of the system	As new governance formats – depending if fundamentally changing the decision-making structure or new forms of decision-making procedures (i.e., ecologically oriented governance structures; i.e. River Basin District Management focused on Ecological Quality Standards within the EU Water Framework Directive)



SUMEX SD Aspect: Engage in continuous dialogue with stakeholders, create trusted grievance mechanisms and shared investigation and problem-solving processes

Leverage Point	Interplay of SD Aspects & leverage point
4 Power to change the rules & structure of the system (here structure means the structure of rules)	Engage in continuous dialogue with stakeholders
5 Rules & Institutions to build/"operationalise" the (new) system	Trusted grievance mechanisms
6 Structure of information flow & access to information	Engage in continuous dialogue with stakeholders shared investigation

SUMEX SD Aspect: Protect cultural heritage, i.e. regarding indigenous people and ensure free, prior and informed consent

Leverage Point	Interplay of SD Aspects & leverage point
2 Mindset & worldviews in which the system is rooted	Protect cultural heritage, i.e., regarding indigenous people
4 Power to change the rules & structure of the system (here structure means the structure of rules)	Prior and informed consent

SUMEX SD Aspect: Share data and information transparently (incl. payments and revenues, environmental and social data)

Leverage Point	Interplay of SD Aspects & leverage point
6 Structure of information flow & access to information	Share data and information transparently

SUMEX SD Aspect: Diversity, inclusion & anti-discrimination (i.e. gender, young and old, indigenous people)

Leverage Point	Interplay of SD Aspects & leverage point
3 Goal & intent of the system	Diversity, inclusion & anti-discrimination (i.e., gender, young and old, indigenous people) – done, but there are still societal / political discussions, e.g. Poland, Hungary

SUMEX SD Aspect: Improving workers' well-being (zero harm, improved skills, fair compensation and terms of work, involvement)

Leverage Point	Interplay of SD Aspects & leverage point
3 Goal & intent of the system	Improving workers' well-being (zero harm, improved skills, fair compensation and terms of work, involvement) – culture change at company level

SUMEX SD Aspect: Holistic management and continuous learning (systems thinking, company and site impacts, the ability to learn from mistakes, social/peer learning, reflexivity, continuous monitoring and reporting)

Leverage Point	Interplay of SD Aspects & leverage point
1 Power & capacity to transcend & change worldviews	Continuous learning, reflexivity
6 Structure of information flow & access to information	Continuous monitoring and reporting



Table 3: Sustainable Development (SD) Aspects & Leverage point interplay in the SUMEX SD dimension of 'Environmental Sustainability'.

SUMEX SD Dimension: Environmental Sustainability	
SUMEX SD Aspect: Integrated, watershed-based water stewardship (incl. a focus on water efficiency and avoidance of freshwater use)	
Leverage Point	Interplay of SD Aspects & leverage point
4 Power to change the rules & structure of the system (here structure means the structure of rules)	Integrated, watershed-based water stewardship
12 Parameters, metrics, numbers	Water efficiency and avoidance of freshwater use
SUMEX SD Aspect: Efficient energy consumption, based on renewable energy	
Leverage Point	Interplay of SD Aspects & leverage point
12 Parameters, metrics, numbers	Efficient energy consumption, based on renewable energy
SUMEX SD Aspect: Carbon neutrality	
Leverage Point	Interplay of SD Aspects & leverage point
3 Goal & intent of the system	Company level transition plan in a societal context
12 Parameters, metrics, numbers	Carbon neutrality
SUMEX SD Aspect: Zero harmful air emissions	
Leverage Point	Interplay of SD Aspects & leverage point
3 Goal & intent of the system	Company level transition plan in a societal context
12 Parameters, metrics, numbers	Zero harmful air emissions
SUMEX SD Aspect: Arrangement of different land uses (spatial and temporal) and net positive impact on ecosystem services and biodiversity (incl. from indirect impacts)	
Leverage Point	Interplay of SD Aspects & leverage point
12 Parameters, metrics, numbers	Net positive impact on ecosystem services and biodiversity
SUMEX SD Aspect: Advanced waste management (considering secondary resources from traditional waste by-products, zero waste to landfill, no impact on surrounding environment)	
Leverage Point	Interplay of SD Aspects & leverage point
4 Power to change the rules & structure of the system (here structure means the structure of rules)	Advanced waste management (in the context of stewardship, integrating companies and at a regional level)
10 Material Stock and flows	Considering secondary resources from traditional waste by-products
12 Parameters, metrics, numbers	No impact on surrounding environment, zero waste to landfill

INSTITUTIONAL RESOURCE REGIME

The discourse around sustainability over the past 30 years recognises the limits of traditional environmental policies, which tend to address only the use of the environment as a sink for pollution and therefore regulate only the emission of pollutants. In response to that, the Institutional Resource Regime (IRR) approach offers a resource-based method for sustainability. In the IRR, the focus shifts from pollution restriction to the management of “stocks” used from a resource in a way that will safeguard the reproductive capacity of the resource systems (Knoepfel *et al.*, 2007).

Against this background, the IRR sustainability approach encompasses the SUMEX approach on planetary boundaries and sustainability since the IRR framework facilitates the analysis of the resource management practices and the regulatory measures associated with competitive (and sometimes conflicting) heterogeneous use situations. More specifically, the IRR explores the causal relation between the Institutional Regime in place (a combination of public policies and property rights), user constellation and their appropriation strategies on the one hand and the condition of the resource on the other. The underlying hypothesis of the IRR is that the closer the resource regime moves toward an Integrated Regime, the higher the likelihood of the creation of conditions for the sustainable management of the resource.

The application of the IRR framework for the analyses of case studies starts with the delineation of the boundary relevant to the management of mining sites, including the affected infrastructure and buffer zones. Next, an inventory of the existing and planned uses of land should be carried out and serve as a basis for identifying the user regime and stakeholder analysis. Stakeholders include public and private entities with use rights deriving from property rights or their representatives (owners, tenants, leaseholders, housing associations, mining permit holders and/or concessionaires, associations of miners, farmers/ farmers associations, etc.) and public authorities responsible for the elaboration and implementation of the policy instruments that regulate every land use included within the boundary of the use case (Mining Inspectorates, Directorate General of Energy Policy and Mines, Regional and Local Authorities responsible for Land Use Planning, Environment Protection Agencies, Water Boards, Forest Management Authorities, etc.). The stakeholder analysis is supported by semi-structured interviews with identified key stakeholders, which help define the context and formulate the corresponding challenges (scarcity, identification of rivalries between different users, etc.).

Qualitative policy analysis follows, covering the central policies that regulate use rights in the study areas, applying two main dimensions to define and categorize Institutional Resource Regimes: a) extent and b) coherence. In terms of extent, the policy analyses determine the extent to which all services and goods used are regulated, seeking to identify policy gaps that can lead to overexploitation of certain goods. In terms of coherence, the policy analyses focus on evaluating: 1) Internal coherence of the public policies, vertically (amongst different levels such as EU legislation, international conventions, National legislation, Court decisions, Regional/Local regulations) and horizontally (amongst different policies affecting the resource, i.e. mining policy vs water policy vs land use policy), and



2) External coherence, assessing the correspondence between the target groups of public policy on the one hand and the holders of rights under the Property Rights system in place, on the other.

Additionally, policy instruments (including permitting, land-use planning, access to land, and socio-environmental impact assessment) are assessed based on efficiency, effectiveness, legitimacy, and justice evaluation criteria.

QUALITATIVE POLICY ANALYSIS – THE INTERPLAY OF PUBLIC POLICY ALONG THE SUMEX SUSTAINABILITY ASPECTS

Next to the IRR, the qualitative policy analysis investigates the implementation of policy instruments on the regional and local levels, as this is most relevant for the analysis of case studies. The qualitative analysis looks explicitly into evaluation criteria of effectiveness, justice, and legitimacy. Building on the IRR, SUMEX will apply qualitative policy analysis and investigate policy instruments (including permitting, land-use planning, access to land, socio-environmental impact assessment) based on the evaluation criteria of efficiency, effectiveness, legitimacy and justice.

Regarding the evaluation criteria justice, policy analysis includes distributional and procedural justice. The assessment of distributional justice considers ownership and its relation to benefits and burdens. The analysis of procedural justice scrutinises stakeholder's participation in governance regimes and how it supports policy agenda setting, design and implementation along with different policy regimes.

Legitimacy is an essential part of justice and policy implementation since it relates to the long-term goals and interests of authoritative decision-makers representing society's acceptance of their legitimate claims to govern (Wallner, 2008): Both the substantive as well as procedural elements of public policies, along with the entire policy cycle, influence (the perception of) legitimacy held by both stakeholders and the public. Along the substantive dimension, policy content should reflect the dominant attitudes of stakeholders and, if possible, the general public. Along the procedural dimension, aspects such as adequate stakeholder involvement, co-design processes in policy design and implementation or policy windows (of opportunity) outlined by Kingdon (1984) or appeals to garner support for an initiative influencing the legitimacy of public policies and the public authorities promoting them.

THE SUMEX KNOWLEDGE REPOSITORY

The SUMEX knowledge repository is a collection of EU industry and policy good practices within the extractive sector. The repository is available on SUMEX's webpage, and it highlights examples of sustainable practices in the extractive sector.

It offers the following benefits for SUMEX and other interested stakeholders:

- A baseline for learning actions: introducing well-described good practice information into personal learning actions
- Comprehensive data mapping: account for more differentiation, contextual information, and clear-cut topic demarcations
- SUMEX expert validation & editorial process: structuring of data according to data quality & reliability as well as verification by SUMEX.
- A meta-data section for transparency: display information on the methodology of good practice identification and systematisation

The repository is open to all stakeholders looking for information about potential solutions to challenges posed by extractive activities. The repository functionalities enable the identification of good practices from broad sustainability topics (e.g. Diversity, inclusion & anti-discrimination or Land-use and biodiversity) to a high degree of differentiation (e.g. different extractive life cycle stages or commodity types). Once an aspect or factor is identified as relevant, visitors can access the source where the practice is discussed in more detail via the links provided (Figure 1).



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COMMUNITY-COMPANY ENVIRONMENTAL MONITORING PLAN

- Health and safety
- Land-use planning
- Permitting processes / policy integration
- Reporting official statistics
- Socio-economic and environmental impact assessments

Challenge the practice is addressing: MIREU Tool 5.1 is a Community-Company Environmental Monitoring Plan (CCEMP). It is a negotiated agreement between local communities and the mining company operating in the area. The CCEMP is a sort of a roadmap for monitoring negative environmental impacts of a mining project and it should be created in close collaboration with the local community members and other stakeholders.

Concrete practice to achieve the expected goal: The tool is presented through three key points: 1) the company developing the CCEMP in collaboration with stakeholders should decide – first, how to collect and interpret data before and after a certain activity is conducted – and second, what are the actions to take when issues are reported and how the results from the monitoring process will be communicated, 2) creating a committee (consisting of various stakeholders) for environmental monitoring is encouraged and 3) follow-up measures to deal with potential negative environmental impacts should be defined and agreed.

Expected impact/goal of the practice: The expected impact of the CCEMP is that companies and local communities will establish functional means of collaboration in order to monitor environmental impacts together.

Who is the target user group of the practice/intervention or implementing the practice/intervention? The target group of the practice is companies.

YEAR	2021
HIPERLINK	View document
SOURCE	MIREU D4.4 SLO Toolbox, Tool 5.1: Community-Company Environmental Monitoring Plan. P.53-54
LEARNING RELEVANCE	Guidelines / guidance document Tool(kit)
LEARNING LIFE-CYCLE	Pre-exploitation / development stage (e.g. feasibility study)
COMMODITY	Unspecified (universally applicable)
PRACTICE TYPE	Industry
ECONOMIC	Accountability Shared vision partnerships Stakeholder engagement
FORMAT	Repository, resource libraries & toolkits
DATA ITEM TYPE	Practice base
SUMEX FOCUS AREA	Socio-economic and environmental impact assessments
SYSTEM CHANGE POTENTIAL	MIREU Tool 5.1 is a Community-Company Environmental Monitoring Plan (CCEMP)

Figure 1: SUMEX knowledge repository: Screenshot of the single data item view – i.e. when clicking on a search result.



What is in it?

The data on the knowledge repository are classified according to their relevance to several different criteria relating to the SUMEX approach to sustainability. These start with descriptive criteria such as the extractive life-cycle stage, the commodity type, the relevant SUMEX focus area they are addressing, and their relevance for industry or policy stakeholders (or both). Furthermore, these criteria highlight the format of the data (i.e. report) and how it can be used for good practice learning (i.e. guidance document). Lastly, the practices are classified according to their sustainability scope in terms of economic, social and environmental sustainability and various subtopics, as well as their system change potential using the concept of Leverage Points.

In addition to classifying information on these different criteria, all data have a short description attached to it to give readers a brief overview of the good practice at hand. This overview discusses the specific challenge the practice is addressing, highlights the concrete approach to address the challenge and its expected impact, and mentions the target group for which this practice is relevant.

NEXT STEPS IN SUMEX

While the broader network & dissemination activities as well as the publicly available SUMEX knowledge repository will be benefitting all target audiences to tap into the potential of learning from good practices and training materials compiled throughout SUMEX, only a limited number of people and organisations will benefit from the in-depth and informal learning and engagement components of the project. For the purpose of engaging with people and organisations with similar learning needs and organisational backgrounds as well as thematically narrowing down the focus, SUMEX will foster a Learners and Leaders League (3L) and a Community of Practice (CoP) along the project five topic areas, i.e. socio-economic and environmental impact assessments, land use planning, health and safety, reporting official statistics, permitting processes / policy integration.

The CoP and particularly the 3L Community play a fundamental part in the design and implementation of both the SUMEX knowledge repository and learning component.



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ABOUT SUMEX

SUMEX is a 36-month project funded by the European Commission that started on 1 November 2020. The project aims to establish a sustainability framework for the extractive industry in Europe, with the involvement of stakeholders from civil society, academia, industry and government backgrounds from all across the EU.

The SUMEX consortium includes:



For more information on the topic described in this policy brief, please download the source report (SUMEX Project Deliverable 1.1) from <https://bit.ly/3l8d0Yh>.

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