Report: Social acceptance in the European raw materials sector

Workshop held in Brussels on 05 June 2018

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TABLE OF CONTENTS

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REPORT: SOCIAL ACCEPTANCE IN THE EUROPEAN RAW MATERIALS SECTOR - Workshop held in Brussels on 05 June 2018

1. INTRODUCTION

The workshop on Social Acceptance and Trust for mining and processing undertakings was organised by the Raw Materials and SILC II sector (B.2.4) of the Unit B.2 H2020 Environment and Resources at the Executive Agency for Small and Medium-sized Enterprises (EASME), in Brussels, on 05 June 2018.

In June 2018, the sector B.2.4 monitored 56 EU H2020 projects (actions). These actions contribute to different fields of activities falling under the three pillars of the EIP's Strategic Implementation Plan (SIP)[1], in 46 EU and worldwide countries.
Twenty nine, out of the 56 projects funded under Horizon 2020, have been selected to present their activities aiming to improve society's acceptance of, and trust in, the sustainable production of raw materials in the EU.

1.1. Background and objectives

Social acceptance and trust is seen as approval, consent, demands, and expectations from the local community and other stakeholders in relation to specific local projects. The concept has become increasingly important, especially in the extractive industry such as mining, oil, and gas, and more recently it has been adopted also in other economic sectors such as energy production, agriculture, and forestry. However, mining has been associated with a negative image amongst European citizens and worldwide. The positive contribution of mining to everyday activities, to GDP, to manufactured goods consumption, to innovation and to green technology is often overlooked. Society's reliance on and appreciation of consumer goods is not always reflected in its appreciation of the underlying extraction and processing activities.

The Horizon 2020 calls for projects encourage consortia to investigate a possible strategy on how civil society will be engaged in order to build public acceptance and trust in the mining and recycling sectors in Europe.

The workshop aimed to help in obtaining a broader understanding of how extraction activities are received in different parts of Europe and worldwide, and how they are perceived in terms of impact on society - both in terms of wealth (growth and jobs), and welfare (social and cultural values).

The objectives of the workshop included:

- Initiating and sustaining dialogues among beneficiaries engaged in public awareness and trust-related activities;
- Allowing clustering with other EU funded projects to enable alignment and to avoid redundancy of public awareness and trust-related activities, and to identify synergies and ways to work together;
- Allowing developing ways for interaction, for example what the EU H2020 projects can do for broader societal outreach (in terms of communication, dissemination, direct engagement in projects etc.);
- Providing policy feedback to the European Commission, for future support through H2020 calls and/or programmes.

The workshop accommodated discussions focused on the approaches taken and lessons learnt through clustering of the selected EU H2020 projects and key

[1] https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/strategic-implementation-plan-sip-0

stakeholders. In this perspective, it was considered how European funding can be used to develop new schemes or improve existing ones. The workshop ended with a panel discussion and the main conclusions of the day.

The event was an excellent opportunity for meeting and exchanging knowledge and experience related to communicating activities with the public, as well as establishing a network of partner and relevant stakeholder organizations.
About 60 participants took part in the workshop; most them were from EU H2020 funded projects and key stakeholders from the European Commission (EC) such as the EASME, DG GROW, and DG ENV, but also from the EIT Raw Materials and other organisations based in Brussels such as the Industrial Minerals Association Europe (IMA-Europe).

1.2. Information about the day's agenda and sessions

In the four plenary sessions, the selected projects presented their outcomes and shared good practices concerning social acceptance.
Additionally, they raised awareness and called for further dialogue with Civil Society Organizations, relevant stakeholders, NGOs, and authorities, while discussing concrete actions (e.g. environment, legal, cultural, etc.); as illustrated in the Agenda given in Appendix A.
The event was also accompanied by a questionnaire to which about 60% of the participants responded; some of the outcomes are shown in Appendix B.

The main elements at the workshop:

- Introductory remarks were given by Mr **Arnoldas Milukas**, Head of the Unit B.2, EASME. This was followed by presentation on policy aspects related to social acceptance and trust by Mr **Milan Grohol**, Policy Officer in the European Commission's Directorate General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW).
- Three keynote speeches were given by Ms **Masuma Farooki** (MineHutte), Mr **Rauno Sairinen** (University of Eastern Finland) and Ms **Sarah Gordon** (SATARLA) who presented, based on their experiences, how to operate within the larger social acceptance paradigm, social acceptance at the local level and how various stakeholders manage and address the issue within the EU. The international context and case studies from Africa, South and North America were also discussed.
- Thirteen presentations of EU H2020 projects were made in the four following sessions:
    - Exploration and Extraction
    - Processing
    - Framework conditions
    - International dialogue
- The networking lunch accommodated posters of other EU H2020 projects. Meanwhile some of the participants were invited for recording short interviews.
- The round table led by the moderator, Ms **Pamela Lesser** (University of Lapland), posed to the keynote speakers some questions about the lessons learnt during this workshop.
- The main conclusions were delivered by Mr **Marcin Sadowski**, Head of the sector B.2.4, EASME.

The projects' contributions and the short interviews can be consulted through the EASME website using the following link: https://ec.europa.eu/easme/en/workshop-social-acceptance-european-raw-materials-sector.

2. WORKSHOP PRESENTATIONS AND DISCUSSIONS

2.1. Introductory remarks

Mr **Arnoldas Milukas** opened the workshop, congratulating the EU Horizon2020 projects for delivering excellent results.
Mr Milukas perceived the conference as a series of success stories, which provide the EC with valuable input for policy tasks. He also stressed that various issues of public acceptance of sustainable mining operations strongly influence the mining industry. This is reflected in the Horizon 2020 projects that aim to improve societal aspects of production of raw materials in the EU.
He said: "We believe that entering into dialogue with the local population and establishing good communication is an important step to building a trust-based relationship with society on Raw Materials activities. We thought it would be important for the projects to share their experiences in communicating with the public. **It is important to identify the synergies, to determine mechanisms that work and do not work, and to develop plans and practices for the future that run easier and faster**".

Then Mr **Milan Grohol** started his presentation by highlighting that today's EU reality is concentrated on the import of raw materials from outside the EU, and this has to change in the future.
Mr Grohol addressed the complex issue of public awareness, acceptance and trust and explained that, to find public acceptance, citizens should benefit from EU mining activities while being reassured on their concerns. The monitoring of public acceptance in Europe in 2016 showed that the majority perceives mining activities as the most unwanted business in Europe. Therefore **it is necessary to improve public acceptance, by continuing to work on it, and by explaining why raw materials are so important for Europe and its industries. At the same time, how Horizon2020 projects can make production of raw materials more acceptable for the European citizens needs to be well advertised**.

2.2. Keynote speakers

2.2.1. First keynote

Ms **Masuma Farooki**, Consulting Director at MineHutte, delivered the first keynote presentation of the day. She was involved in the project STRADE, which developed recommendations for the EU to source responsibly mined minerals from domestic and international supplies. The project ended in November 2018. Ms Farooki addressed the issue of **why social acceptance in the EU is always so difficult to achieve.**
The points raised are summarized below:

- The complicated process of finding social acceptance is crucial for extractive activities as it relates to many aspects and activities (cooperation with the local communities, involvement of social media, work with public relations, etc.). When societal trust is missing, extraction activities are sometimes hampered despite all the mining company's good intentions.
- "Anti-mining" voices are well established in the European society and they stem from a problematic legacy of unfortunate events in the European extraction industry (in the past environmental damage, lethal accidents, etc.).
- "Pro-mining" voices are almost inaudible and this is something to deplore. **There is a need to have a voice that speaks for the mining industry**.
- Public perception of mining industrial activities has changed with time from a "pro-mining" to an "anti-mining" attitude. Ms Farooki stated that today the concern is **not just social acceptance of mining but rather total social exclusion**.
- **Powerful images to spread can be the results of the implementation of environmental standards, or the outline of a contemporary**

technological "green" mine. Mining needs to be put forward, and people need to learn what extraction of raw materials is about: "when we talk about solar energy, electric vehicles, or construction of a power plant, it implies a need for raw materials to feed into the supply chain, and consequently extraction is needed. Ms Farooki concluded by this statement: "We need to change the way we communicate and what we communicate about contemporary mining."

2.2.2. Second keynote

The second keynote speaker was Mr **Rauno Sairinen,** Professor of Environmental Policy at the University of Eastern Finland and scientific leader of the Institute for Natural Resources involved in the project IMPACT.
Mr Sairinen presented the legacy of "social licence to operate" in mining, in general and in the Finnish context.

- National surveys launched by the Research Centre for Social and Environmentally Responsible Mining at the University of Eastern Finland have demonstrated a general "pro-mining" Finnish attitude towards mining. Sixty to seventy percent of the respondents support mining. However, when the discussions come to critical issues such as ecology and environment, the public tends to exhibit scepticism and needs to be guaranteed that environmental regulations are strictly observed. The surveys undertaken by the Finnish Research Centre also showed that the relation to mining is not equally positive in all the European countries, and this result should be analysed in more detail.
- Mr Sairinen presented his definition of social licence to operate as follows: "**It has been very broadly defined as social approval or acceptance of mining activity within the local community and by other local stakeholders. So it is very much focused on the local acceptance, but also refers to the national level. Social acceptance and trust is a metaphorical concept, not a paper or document, and it is a process and relationship, although we talk about certain 'permission' or even 'license'. Its context depends on the society, politicians, historic community development and regulations.**"
- Further, Mr Sairinen mentioned that social acceptance in mining has to be maintained and developed continuously. Nowadays mining companies know very well that acquiring trust is an activity that lasts from the start to the end (and beyond) of the mining process. However it is very difficult to measure the degree of trust which can start with the general acceptance and rise to the degree of "psychological" identification with the mining activity (for example when the city/ region has a very long mining history).
- Mr Sairinen concluded that mining requires being a part of the community in which it functions. The costs resulting from delays in extraction operations increase when social acceptance is not secured. Without trust, mining cannot be perceived as a responsible business, especially in the European Union where public opinion matters, and more specifically at the local level where mines are located.

2.2.3. Third keynote

The third keynote speech was given by Ms **Sarah Gordon**, Managing Director at SATARLA, Terrabotics. Sarah Gordon devoted her lecture to social acceptance and trust in the international context.
Ms Gordon stated that social acceptance and trust all over the world means: "Happy communities who live with dignity and respect". It also means a thriving **environment and sustainable wealth** in the broadest context for local society and for nation as a whole.
In terms of social engagement a lot could be learnt from Australia and Canada that have important mining activities and a rich historical mining legacy. Other examples of

countries with a long history of mining are Brazil which makes 7% of its national GDP from mining, and South Africa which produces 75% of the world's platinum.

Lessons-learnt in Europe from the mining experience in other countries with a long and rich mining history and positive results in terms of **social engagement** (sustainable working conditions for communities), are given in the following points:

- **Social/Public acceptance and trust is a long process to be developed over years**;
- Cultural factors are as prevalent in the EU as in the rest of the world and parties involved/ mining companies should take the time necessary to understand the context;
- A large number of standards exist already and they should be integrated where/when possible;
- **Strong legislative support should be provided for community development agreements**, as it is the case in the USA and Canada;
- **All the stakeholders should be included in the social engagement process** such as NGOs as well as investors, insurance companies and regulators: reference is made to the case of Brazil, where the integration and acceptance process includes government agencies, community, company, and NGOs. The Brazilian mining legislation has recently included a listening process for environmental license which allows everyone, i.e. local, national and international specialists and public to be heard);
- **The social dimension of any extracting undertaking must be taken into account as early as possible when starting mining projects and the social agreement should be reached at the very beginning of the projects**. This is a long term thinking that should also include the design dimension for the future.

2.3. Summary of the projects presentations

2.3.1. Session 1: Exploration and extraction

The first thematic session comprised the presentations of five projects: SLIM, HiTechAlkCarb, VAMOS, ITERAMS and INFACT, with activities in the fields of exploration and extraction (Technology pillar). Key aspects and lessons learnt from these presentations are summarised in Table 1.

- *The SLIM project - "Importance of establishing a local community relation strategy and an open and early dialogue with stakeholders to benefit the mining activities and obtain the "social license to operate"*

The first speaker of this session was Ms **Paula Rico,** a senior consultant in the Social Innovation department at the Zabala Innovation Consulting. Her presentation was dedicated to the importance of a strategy for a stable relation with the local community, and to have an open and early dialogue with stakeholders in order to benefit the mining activities. The SLIM project aims at a sustainable, low-impact mining solution for the exploitation of small mineral deposits based on advanced rock blasting and environmental technologies. The project's objectives, in terms of social issues, are to raise public awareness, acceptance and trust about the sustainable responsible mining and to promote due diligence and ethical exploitation in the mining sector.

Ms Rico presented three mining facilities: two from Spain and one from Austria, involved in the SLIM project. This work was implemented on three different levels and involved companies, stakeholders and the society. The mining companies were encouraged to identify, establish and maintain relationships with the local communities.
The results of the project in enhancing social awareness included, but were not limited to, the **identification of the main stakeholders; recognition of the current**

communication channels and strategies; case studies analysis and guidance; identification of the best practices on social communication and recommendations; and introduction of anticipatory methodologies to promote local communities involvement based on dialogue.

- *The HiTechAlkCarb project - "Challenges in geological scientific fieldwork at the Kaiserstuhl Carbonatite, Germany"*

The second speaker, Ms **Alexandra Speiser** is the Head of the Environmental consulting company ASEC. She is responsible for carrying out the environmental and social acceptance for the research test-drilling site for the HiTechAlkCarb project. Her presentation **was dedicated to the challenges experienced during the scientific fieldwork at the Kaiserstuhl in Germany.**
The HiTechAlkCarb project aims to improve geo-models to target mineralisation at depth in alkaline and carbonatite complexes. New technologies are in high demand for critical metals (which are not sufficiently mined in Europe), and many of them are found concentrated in alkaline igneous rocks and carbonatites. Exploration models are limited and targeting can be difficult, it is therefore important to look for the deposits of such elements in Europe and to develop methodologies and strategies to target them.

The mining site located at Kaiserstuhl was selected for an exploration campaign involving drillings. The area around Kaiserstuhl is also one of the warmest zones in Germany; it therefore hosts many different tourist activities. Moreover, due to this special local climate and soil, specific endemic fauna and flora are developed in natural protected zones.
After discussions about liability risk insurance, license to drill was granted by the local authority, the Municipality of Vogtsburg, to the project partner Terratec, responsible for the drilling campaign. As a consequence of the boreholes drilled into the swelling anhydrite layer and the artesian aquifer, small fractures appeared in the 16th century town hall, and in about 250 buildings surrounding the site.
Despite the concerns of the local authority, the Kaiserstuhl community remained relatively positive about the overall project due to the outreach and informational work done by the project partners. The fact that the community had faced similar issues in the past partially explained this outcome: drilling of geothermal boreholes to heat municipal buildings in the town of Staufen im Breisgau , located at about 25 km from Kaiserstuhl, caused similar damages.

- *The VAMOS project - "¡VAMOS! stakeholder engagement: insights from Newcastle and São Domingos workshops"*

The third speaker of this session, Mr **Marco Konrat Martins,** works as a project manager and researcher at La Palma Research Centre.
The VAMOS project is developing an underwater mining prototype, which aims to offer a safe and clean way of mining in flooded deep mines (where extraction can be difficult due to technical and geological barriers). Mr Martins stated that mining is not an easy operation to develop because of its heavy historical environmental burden. Social and environmental concepts in Europe can prevent mines from being reopened. Innovative technologies such as the one tested in VAMOS aim to encourage the re-opening mines in the European Union.

Mining activity in Sao Domingos (Spain) occurred already in the Roman era. Mines were operated in the area in the second part of the 19th century, the population still remembers these past mining activities. A workshop organized by the project brought together the population from Sao Domingos and from neighbouring towns in Spain, and the project's objectives were introduced in a very straightforward manner. The workshop was facilitated by distributing the participants in small groups, where developmental scenarios for the area and ideas of an alternative future were presented. The possibility of re-opening mines in the area was discussed. One of the

two main outcomes was that **highly automatized mining operations were not seen as a disadvantage by the population**. Moreover, the population realized that advanced technological progress could bring economic growth to the region. The second one was that **the population acknowledged the importance of mining in the region**. Mining companies contribute to the regional development and future mining operations should properly manage the existing mineral resources so that operations could last for several generations.
Concluding his presentation, Mr Martins stated that one-side solutions do not prevail. **Historical background and community engagement are crucial factors to consider when seeking social acceptance.**

- *ITERAMS project - "Closed water loops and mine waste valorisation to gain social license to operate"*

The fourth presentation was given by two speakers on behalf of the ITERAMS project, Ms **Ester Vilanova**, a project manager in the Soil and Groundwater department of Amphos[21] Consulting S.L; and Mr Andreas Ciroth who works for GreenDelta.
The ITERAMS project aims to develop a closed loop water cycle for efficiently recycling mining waters and reducing water consumption during extraction processes. It also aims to valorise tailings (by creating geopolymers) at mine sites for an improved environmental and economic result to enable future sustainable mineral supply in Europe. The developed innovative solutions are to be implemented and validated in three sites: in Finland, in Portugal, and in Chile or South Africa.

The project also aims to assess whether the new combined technology is more sustainable over the whole life cycle combining environmental, economic, and social dimensions. For the outreach a first screening was performed using the qualitative CLD (Causal Loop Diagram) model to explore risks and impacts generated by the different processes of the mine operation. The CLD on social impacts displayed the influence of risks and technology choices with reference to consequences for local communities. Generic data on the geographic localization of social impacts related to metal ores mining worldwide was displayed using the PSILCA generic social LCA (Life Cycle Assessment) database.
Results from sustainability screening models help to create a dialogue with local communities and among project partners as they enable a better understanding of the environmental and social issues associated with mining (ref. Di Noi and Ciroth, 2018[2]).

- *The INFACT project - "THE FUTURE OF MINERAL EXPLORATION IN THE EU"*

The fifth speaker was Ms **Leila Ajjabou**, a geoscience engineer and project manager at the Helmholtz-Zentrum Dresden-Rossendorf e.V. (HZDR). HZDR coordinates the INFACT project. One of the INFACT objectives related to social acceptance and trust is to benchmark innovative non-invasive mineral exploration techniques with a strong focus on stakeholders' engagement at three references sites in Europe, namely Sakatti (Finland), Geyer (Germany), and Andalusia (Spain).

The project aims to establish permanent reference sites where European companies could test their non-invasive exploration technologies such as airborne technologies.

[2] Article: Environmental and Social Pressures in Mining. Results from a Sustainability Hotspots Screening; Claudia Di Noi and Andreas Ciroth; Resources 2018, 7, 80.

https://www.researchgate.net/publication/329384185_Environmental_and_Social_Pressures_in_Mining_Results_from_a_Sustainability_Hotspots_Screening

Talking about these sites, Ms Ajjabou stressed again **the importance of securing social acceptance and trust to maintain activities**. HZDR is responsible for mediating social dialogue and technical cooperation for the three sites involved in the project and establishing trust by building long-term relationships between local communities and mining companies. Social acceptance in INFACT is built on the analysis of perception and opinion (citizen survey), reference site stakeholder engagement and expert stakeholder engagement. **A key factor is to analyse the pre-existing situation and the links between the local community and the authorities to get an understanding of possible pre-existing conflicts**. Analysis of popular perception and opinion, and discussions with experts were planned in the three countries where mining exploration was foreseen. Expert stakeholders' surveys were carried out in seventeen European countries, involving about one thousand people. The conclusions drawn from this analysis were that **stakeholder engagement and understanding of the local and national contexts are crucial to obtain social trust**. And also that **effective engagement requires understanding of what stakeholders think, feel and do** because stakeholders are individuals who have an interest in, are affected by or can have an effect on the project.

Table 1. Key aspects and lessons learnt from the session on exploration and extraction

Enhancing social awareness comprises identification of the main stakeholders, recognition of the current communication channels and strategies, case studies analysis and guidance, identification of best practices on social communication and recommendations and introduction of anticipatory methodologies to promote local communities involvement based on dialogue.
Dialogue is a major key: a local community relation strategy is recommended, as well as an open and early dialogue with stakeholders.
Context: cultural & historical backgrounds, pre-existing situation, present local and national context, matters in developing social acceptance.
LCA (Life Cycle Assessment) screening studies serve to initiate communication with local communities as they enable a better understanding of the environmental and social issues associated with mining
Mining companies contribute to the regions' development and it is important to raise awareness of the local communities concerning the benefits the project brings to them.

2.3.2. Session 2: Processing

The second session included the presentations of three projects in the field of processing (Technology pillar): CHROMIC, SCALE and PLATIRUS. Key aspects and lessons learnt from these presentations are summarised in Table 2.

- *The CHROMIC project: "Involving citizens and stakeholders in circular economy technical matters. The case of the Chromic project"*

The first speaker of the processing session was Ms **Federica Manzoli**, researcher in the field of social studies on science and technology and affiliated to Formicablu srl (IT), beneficiary in the CHROMIC project. Her presentation dealt with the **involvement of citizens and stakeholders in the circular economy**. By addressing a technological challenge, CHROMIC aims to bring economic and environmental improvements for the benefit of the related industry, and of the society as a whole.

The project shares tools, scientific results and possible applications with different stakeholders along the value chain, with the aim to exchange with them and collect their feedbacks. The proposed **"community involvement plan**" includes interviews with the project partners, focus groups with citizens from local communities, and workshops with stakeholders.

Four focus groups were organised in Belgium (Genk), Germany (Leverkusen), France (Lille) and Italy (Brescia) and included participants with various profiles such as university students and high school teachers in humanities, economics and natural sciences, persons responsible for the household management, person working in the health sector as well as retired and unemployed persons. During the workshops the concerns were related to the following questions: how to involve people (whom to invite, incentives to come, etc.)? How to explain the technological changes? Do people understand the project's topics? Do they understand the importance/ the impact of what we are doing? Related issues such as health, resources, ecosystems, climate change, and economics were included in the agenda in the light of what the participants knew and experienced in their daily lives. Participants were also asked to elaborate possible strategies for communication on the project's scope and potential results. Four workshops with stakeholders focused on the circular economy and the recovery of metals from secondary materials, as studied in CHROMIC.

Ms Manzoli concluded her presentation as follows: "To take into consideration different arguments is a way to **weaken biases and leave the ground to a diversity of opinion, options, and ideas**; **and to identify different solutions to the same problem**. But the main concern faced by the project is to integrate different types of profiles to effectively reach common goals."

- *The SCALE project: "SOCIAL ACCEPTANCE WORKSHOP"*

The second speaker, Mr **Efthymios Balomenos**, works as an external associate in Mytilineos S.A. and representative of Mytilineos at the European Aluminium Innovation Hub.

The main objective of SCALE is the efficient exploitation of EU resources and by-products that contain high concentrations of scandium. This includes bauxite residues resulting from alumina production and acid wastes from TiO_2 pigment production. Scandium is a critical raw material used in aerospace and in the high tech industry.
Mr Balomenos presented case studies such as the Gold Mines (Kassandra mines) in Greece, whose operation was for many years subjected to social contestation. The main social barriers encountered are linked with the obstacle for each individual to accept any mining, processing or waste storage activity in his or her direct neighbourhood; also known as the so-called "NIMBY" (Not In My Back Yard) attitude.

Strategies set up in the SCALE project for engaging social acceptance and best practices from case studies were used to recognize possible social tensions and identify ways to resolve them when they appear. The main tools to approach local communities were observed in the intervention area of minimization of waste, optimization of backfilling (*i.e*. material used for refilling excavations), and mining activities. There was also an obvious necessity to establish official commitment, i.e. **introduce a clear business plan of operations**. Pilot applications of innovative methods involved regular "**public demonstrations**" including information sessions for university students. On-line live monitoring data should also be made available on early demand by the population. **Sharing information that the local society can understand by providing for example infographics, documentaries, internet video-coverage, and policy briefs**, **is the key strategy to obtaining social acceptance via innovation.**

- *PLATIRUS project: "Awareness, acceptance and trust of society in the recycling of platinum group metals: a view from the PLATIRUS project"*

The last speaker of the session was Ms **Sofia Riano**, postdoctoral researcher and project manager at the Catholic University of Leuven (B). She presented the ongoing work of the PLATIRUS project on awareness, acceptance and trust of the society concerning recycling of metals. This project aims to select the best combination of recovery technologies and develop a Platinum Group Metal (PGM) recovery process and blueprint process design for the final upscaling step, before launching on the market.
Ms Riano mentioned that social acceptance for the raw materials sector is needed on different fronts, and strategies to engage the public should be further developed. The public is alerted by the fact that the main challenges faced by the EU industries is to mainly rely on the supply of CRMs (Critical Raw Materials) from non-EU countries that are sometimes politically unstable. **PLATIRIUS helps the public to move from a passive role to an active one with a key contribution in the collection and sorting from the sources.** This aims to facilitate and decrease the costs of downstream processing to extract valuable materials. Public acceptance and trust is targeted to encourage the public to support the development of a more stable recycling environment. For attracting public to play a more active role, newsletters, blog posts, videos, science communications were circulated.

Ms Riano also presented how social acceptance and trust is supported by two other H2020-funded projects: NEMO and CROCODILE. Both projects involve active communication and broad dissemination of results, exploitation, and stakeholder involvement. **Stakeholder involvement starts with the identification and study of their interests and potential influence. Civil society engagement comprises both "top down"** (High level multi-stakeholder transition arena, Lessons learnt & policy recommendations) **and "bottom up" activities** (local events; case study project NEW-MINE on Enhanced Landfill Mining: communication, dissemination of the information in a form of website, newsletters & policy briefs, social media, videos, events, workshops).

Table 2. Key aspects and lessons learnt from the session on processing.

Citizens' and stakeholders' involvement in the circular economy involves implementation of a "community involvement plan" that integrates different types of citizen "profiles". This the way to stay open to different arguments, and include a diversity of options and ideas in order to possibly identify different solutions to the same problem.
Sharing information that the local society can understand (for example infographics, documentaries, internet video-coverage, and policy briefs about mining related innovation) is a key strategy to gain social acceptance.
By playing a more active role with a key contribution in the collection and sorting from the sources, the public contributes to facilitating and decreasing the costs of downstream processing to extract valuable materials.

2.3.3. Session 3: Framework conditions

The third session included the presentations of two projects in the field of Framework conditions (Non-technology pillar): MIREU and MIN-GUIDE. Key aspects and lessons learnt from these presentations are summarised in Table 3.

- *MIREU project: "WP4 Social License to Operate"*

The first presentation was given by Mr **Florian Stammler**, Research Professor in anthropology at the Arctic Center, University of Lapland, Finland.
Mr Stammler introduced the MIREU project and the social acceptance and trust guidance and tools for European mining regions. The main objectives of this project are to enhance the cooperation between different mining and metallurgy regions, and to focus on improving the framework conditions, economic competence and social acceptance.

One of the decisions taken to achieve these objectives was to establish the Council of Mining and Metallurgy Regions of Europe (CoMMER): a network that will help the regions to share knowledge and experiences when facing the challenges to establish and maintain extractive industries. The overall purpose of this council is to provide guidance and tools for all stakeholders at the EU level for a more effective engagement and to help them to resolve eventual disputes.

The three issues relevant to the network and associated tasks are the following: the first, called "**Definitions and interconnections**", aims to define and meet societal expectations of industrial performance and accountability, as well as reconnection of the society with the new information on technologies. The second, entitled "**Links between social acceptance and trust and sustainability**", aims to prove that common objectives and values at international and national levels will provide sustainable outcomes that can be defined for everyone, especially affected local communities. The third task called "**European Regional/local Social issues**", concerns environmental legacies, junior mining companies, NGO driven resistance, etc.

The conclusion was that **social acceptance and trust is not just about "community", but it is about communication with people. Knowledge and understanding of local needs and expectations** (including historic and cultural contexts) **must be used**.

- *MIN-GUIDE project: "MIN-GUIDE project overview and links to SLO"*

The second speaker was Mr **Michael Tost**, Senior Researcher at Mountainuniversitaet Leoben, Autria; and the owner of MANGO IMPACT e.U., a sustainability consultancy.

Mr Tost represented the MIN-GUIDE project and focused on the role of policy and economic framework conditions for achieving socially acceptable mining innovations. The general aim of the MIN-GUIDE project is to contribute to an innovation-friendly policy framework for a secure and sustainable supply of minerals in Europe. The project developed a "Minerals Policy Guide" that contains information about mineral and related policies, as well as governance at the Member State and EU level. Although the project has no direct relation to social acceptance and trust, its activities on multi-stakeholders involvement provides feedback on various aspects within society in general and civil society in particular, and the guide also includes a few aspects related to social acceptance and trust. For example, this guide uses **online, transparent, understandable language on non-technology (policy) and technology (innovation cases) related information**. The two key innovation cases across the value chain show different types of impact according to specific sustainability criteria. These two innovations examples in the field of extraction, to be considered in the light of social acceptance and trust in this Guide, are autonomous equipment/ operations; and process control and data management. There will be no

"single bullet" innovation concerning the sustainability challenge, but a mix would be needed with more innovations examples on transparency, land use, environmental management. The overall conclusion is that a **strong "inside out[3]" innovative climate, which is economically driven and focused on technology, might change the societal attitude towards mining.**

Table 3. Key aspects and lessons learnt from the session on framework conditions.

Social acceptance and trust is not just about "community", but it is about communication with people. Knowledge and understanding of the local needs and expectations must be used.
The involvement of multi-stakeholders (policy makers, geological surveys and industries) is important, as well as using transparent and understandable language on non-technology (policy) and technology (including innovation cases) related issues.
Strong "inside out" innovative climate - which is economically driven and focused on technology, might change the societal attitude towards mining.

2.3.4. Session 4: International dialogue

The fourth session included the presentations of three projects in the field of International dialogue (International Cooperation pillar): INTRAW, FORAM and INTERMIN. Key aspects and lessons learnt from these presentations are summarised in Table 4.

- *INTRAW project: "Outreach lessons from other continents"*

The first speaker of this session was Ms **Isabel Fernández**, from the European Federation of Geologists. Ms Fernández presented the project INTRAW that maps and develops new cooperation opportunities with Australia, Canada, Japan, South Africa and the United States, with the objective of launching a permanent international Raw Materials Observatory operating internationally to promote cooperation with technologically advanced non-EU countries.
The project maps best practices relevant to mining (in research and innovation, raw materials strategies and policies, joint educational and skills programs, licencing and permitting procedures, data reporting systems, exploration, extraction, processing and recycling practices management and substitution of critical raw materials, etc.) in the reference countries. The project also investigates the global mining investment attractiveness ranking. The outcomes of this work allow to draw certain conclusions related to social acceptance and trust.

In the five reference countries, a strong correlation was identified between the level of opposition to mining and population density. When population density increases, so does the opposition to mining. Limitation of mining opposition could be achieved by **closely involving local communities into the mining process**. This implies the implementation of multiple measures in different countries, such as **redistribution and engagement culture** (for example, the Japanese Keiretsu[4]) and/or **long-term education and outreach programs** (for example, the newsletter "Mining Matters" published in Canada).

[3] The "inside/out" approach is based on the notion that organizational change follows individual change — understanding, as it does, that an organization is nothing more than a collection of individuals.

[4] Keiretsu is a Japanese word which translated literally, means headless combine. It is the name given to a form of corporate structure in which a number of organisations link together, usually by taking small stakes in each other and usually as a result of having a close business relationship, often as suppliers to each other.

- *FORAM project: "EASME Cluster Event on Social Acceptance in the European Raw Materials Sector"*

The next speaker was Mr **Bas de Leeuw**, the Managing Director of the World Resources Forum (WRF). Mr de Leeuw focused on the **multi-stakeholder dialogue on raw materials** and on the objectives of the FORAM project. FORAM aims to set up an EU-based platform of international experts and stakeholders, to evaluate and advance the idea of a World Forum on Raw Materials, and to enhance the international cooperation on raw material policies and investments.

Five stakeholder dialogue groups were organised within the FORAM project to raise and discuss social issues related to extracting operations and focusing on Innovation, Security of Supply and Growth; Resource Efficiency, Environmental and Social Aspects; Policies, Legal and Financial Frameworks; International Cooperation and Outreach; and Research, Capacity Building and Education.
The conclusions formulated by these groups highlighted the importance of **improving collection of raw materials data worldwide** (primary and secondary), as well as the **need for policies and legislations** (UN Convention as an example). The **importance to involve professionals in decision-making** (to avoid anti-mining biases) was also raised. The necessity for **inclusion of social and environmental standards into any extracting operations plan** (responsible sourcing, circularity, social acceptance, local communities, SDGs) was demonstrated; as well as the need for **enhancing international cooperation and outreach** (through breaking down the silos, building global and regional forums, creating awareness and trust).

In conclusion, governments, industries, financial institutions and the society at large need to identify what composes the "*complex global resource base*[5]" for the raw materials. **Demand for a governance and collective management of the raw materials resource should be formulated in such a way that we all can keep our options open for the future**.

- *INTERMIN project: "Skills and training in community relations, mining conflicts and artisanal mining in the Andes"*

The last speaker of the session was Mr **Luis Jordá Bordehore**, who works at the international relations department of the Spanish Geological Survey.

The presentation was dedicated to the INTERMIN project that aims to identify the skills required (graduate) for the mining and mineral raw materials sectors, gaps between available training programmes and industry needs and explore future pathways to integrate both. INTERMIN will create a self-sustainable long-term lasting international network of training centres for professionals. This project involves educational and research institutions in the EU and the leading counterparts in third countries, based on specific country expertise in the primary and secondary raw materials sectors.

Mr Bordehore described **the main issues faced today by the mining industry in the Andes regarding social acceptance**. The Andean regions, which comprise Peru,

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The traditional *keiretsu* consisted of obligational relationships based on trust and goodwill.
During the past decade, new *keiretsus* (a modern version of the traditional supply system) have been quietly turning their supplier relationships into a tool for innovating faster while radically cutting costs.

[5] Reference to the speech of Mr. Bas de Leeuw at UNECE, Geneva, 24 April 2018 about BUILDING TRUST:
"You need to know how much is in your wallet, to make decisions about buying an ice cream today or keep saving for new shoes. Governments, industries, financial institutions and society at large need to know what is in the raw materials wallet."
"Our *global resource base* is a very complex wallet. Many actors are having their fingers in it. Governance is important: collectively managing the raw materials in such a way that we all can buy our ice creams and keep our options open for our future as well."

Chile and Bolivia have a rich mining history, developed from the Spanish colonial era until today.
Social opposition lasted for decades in these regions and the main issues faced by the mining industry in the Andes regions regarding social acceptance are related to the mining industry's history (bad reputation of companies and inherited environmental problems); poor acceptance of large projects that create legal, environmental and land ownership and political issues; legislation to formalise Artisanal and Small-scale Mining (ASM) is still under development ("legalisation formalización") and illegal mines operate due to several crises and lack of adequate social state coverage subsides; additionally, miners are often not locals, which creates issues for their adaptation and social inclusion.

According to Mr Bordehore social acceptance and trust can be improved in the Andes context by **a strong commitment from companies (in terms of greener and safer mining, increasing welfare for the population, and willingness to collaborate with the local populations); language and the engagement** of geologist and engineers **are also important drivers to be taken into consideration; and overall improvement of the approach to society and the increase of social awareness and sustainability of mining operations** are highly desirable.

Table 4. Key aspects and lessons learnt from the session on International dialogue.

A strong correlation was identified between the level of opposition to mining and population density in a reference study. When population density increases, so does the opposition to mining. A limitation of opposition to mining could be achieved by closely involving local communities into the mining process.
Improving collection of raw materials data worldwide, policies and legislations, involvement of professionals in decision-making, inclusion of social and environmental standards into any extracting operations plan and enhancement of international cooperation and outreach are the needs highlighted to identify what composes the "*complex global resource base*" for the raw materials.
Strong commitment from companies including language skills and engagement of geologist and engineers are important drivers to be taken into consideration in social acceptance in the Andes; as well as an overall approach to society and the increase of social awareness and sustainability of mining operations.

2.4. EIT Raw Materials approach to public acceptance and trust

The presentation on EIT Raw Materials approach to public acceptance and trust was given by Mr **Wesley Crock**, Head of Raw Materials Academy of EIT Raw materials.
Mr Crock presented the EIT Raw Materials, its approach to social aspects and the EIT Raw Materials Academy that targets potential innovators along their entire life cycle. **The social objective of the Academy is to build the social acceptance of, and trust in, extraction operations through offering facts on exploration and mining**. This is done in the form of a roadshow for municipal authorities and the general public. It also provides an educational package for municipalities in local languages. Roadshows were undertaken in Norway, Sweden and Finland. These were one-day workshops with municipality directors, mining/ exploration companies and authorities.

A special education documentary, called AWARD, was screened in the framework of the Academy. AWARD explores the consequences on daily life if a particular material, e.g. copper, suddenly disappears. **The documentary is oriented towards school pupils. AWARD tool-kits, including video and reflections designed for teachers will be prepared, enabling deeper learning about raw materials already at the school level.**

3. WORKSHOP CONCLUSIONS

3.1. Conclusions from the roundtable discussion

The workshop continued with panel discussions among the three keynote speakers led by the moderator, Ms **Pamela Lesser** who is a researcher in the Arctic Governance Research Group at the University of Lapland in Finland.
Ms Lesser invited the speakers to reflect on the topics and issues presented during the day, as well as to share with the audience the lessons they learned during this workshop.

- Ms **Masuma Farooki** appreciated that each project had presented a communication strategy. She stressed that: "The question is, if communication is not working or not taking us to where we want to go, do we need to look outside the box and do something completely different? Do we need to look for communication experiences from other industrial sectors?" She concluded that, **for all the projects there is a balance of power between the communities and the government, and examples of public acceptance and trust from the other industrial areas can be used**.

- Mr **Rauno Sairinen** emphasized the **need to integrate very different scientific and technological knowledge into reaching one common aim of public acceptance and trust**. "When performing research and analysing different conditions and pre-conditions for mining, we certainly need more social sciences from different disciplines. The Horizon2020 program invited social science into a very technological field, and this is big accomplishment," concluded Mr Sairinen.

- For Ms **Sarah Gordon** the aspect of public acceptance and trust is now included in almost all the **mining** projects which should comprise the **following** t**hree components in order to be successful: resources in the ground, social acceptance, skills and money**. The main lessons learnt were that social acceptance prevails over money and skills; and like all projects, mining projects eventually end while the population remains.

3.2. Main conclusions

The main conclusions of the workshop were made in the speech delivered by Mr **Marcin Sadowski**, Head of Sector B2.4 EASME, EC.
Mr Sadowski explained that "We all know that mining in its value chain has an option of interaction with society. This aspect of societal interaction is an incredibly complex notion, as we have been hearing today. It starts with geology, but it involves communication, wealth (generally understood) demography, environment, culture, psychology, history, geography, policy, legal issues. **It requires knowledge and scientific analysis, but also affects emotions of the local community**. Some of the words, such as 'public acceptance', 'community', 'involvement', 'social license', 'engagement', 'popular participation', 'responsible mining' were repeated constantly during this workshop. Even more interesting is the fact that these words have a different meaning for different people. So we thought this would be a good idea to bring projects together, to exchange ideas, thoughts, and phrases to be used. Generally, working together creates synergies and coordinates impacts of individual activities. And this exactly was our main goal. Mining today is changing rapidly; it is progressing towards robotic technologies. Of course, public acceptance and awareness will change as well. Moreover, as it was mentioned, mining comes and goes, but people stay. There is no simple solution for social challenges. But, here today, we are not engaged in researching this issue, **we are engaged in doing better in reaching public acceptance and awareness about mining in Europe.**"

APPENDIX A: AGENDA OF THE WORKSHOP

Cluster event for ongoing Horizon 2020 funded projects that have activities connected with ensuring Public Acceptance and Trust for mining and processing undertakings

Tuesday, 05 June 2018 – Brussels

Final Agenda

Welcome coffee and registration of participants: 08:30 – 09:00		
09:00 09:05	Welcome and opening of the event	**Arnoldas Milukas**, Head of Unit of B2, EASME
09:05 09:15	"Cluster event for ongoing Horizon 2020 funded projects - EASME"	**Milan Grohol**, Policy Officer in DG GROW, EC
09:15 09:30	**First keynote** - "The perception of mining in Europe: The Impact of Social and Cultural Values"	**Masuma Farooki** (**STRADE**), Director, MineHutte
09:30 09:45	**Second keynote** - "Why we need Social Licence to Operate (SLO) when developing European mining industry? And how can we govern and manage that?"	**Rauno Sairinen** (**IMPACT**), Professor, University of Eastern Finland
Session 1: Exploration & Extraction		
09:45 09:55	**SLIM** – "Importance of stablishing a local community relation strategy and an open and early dialogue with stakeholder to benefit the mining activities and obtain the "social license to operate"	**Paula Rico**, Zabala Innovation Consulting
09:55 10:05	**HiTech AlkCarb** – "Challenges in geological scientific fieldwork at the Kaiserstuhl Carbonatite, Germany"	**Alexandra Speiser**, A Speiser Environmental Consultants (ASEC)
10:05 10:15	**VAMOS** – "¡VAMOS! stakeholder engagement: insights from Newcastle and São Domingos workshops"	**Marco Konrat Martins**, La Palma Research Centre
10:15 10:25	**ITERAMS** – "Closed water loops and mine waste valorisation to gain social license to operate"	**Ester Vilanova**, Amphos21
10:25 10:35	**INFACT** – "THE FUTURE OF MINERAL EXPLORATION IN THE EU"	**Leila Ajjabou**, Helmholtz-Zentrum Dresden-Rossendorf, Germany
Questions and answers for session 1 (10')		
Coffee: 10:45 – 11:15		
Session 2: Processing		
11:15 11:25	**CHROMIC** – "Involving citizens and stakeholders in circular economy technical matters. The case of the Chromic project"	**Federica Manzoli**, Formicablu srl
11:25 11:35	**SCALE** – "SOCIAL ACCEPTANCE WORKSHOP"	**Efthymios Balomenos**, Mytilineos SA
11:35 11:45	**PLATIRUS** – "Awareness, acceptance and trust of society in the recycling of platinum group metals: a view from the PLATIRUS project"	**Sofia Riano**, Postdoctoral Researcher and Project Manager at the KU Leuven, Belgium
Questions and answers for session 2 (10')		

Session 3: Framework conditions		
11:55 12:05	**MIREU** – "WP4 Social License to Operate"	**Florian Stammler**, Research Professor, the Arctic Centre, University of Lapland, Rovaniemi, Finland
12:05 12:15	**MIN-GUIDE** – "MIN-GUIDE project overview and links to SLO"	**Michael Tost**, Senior researcher, Montanuniversitaet Leoben, Austria
Questions and answers for session 3 (5')		
Networking lunch & Posters: 12:20 – 14:00 ***POSTERS Session:*** • **SIMS** • **Smart Exploration** • **ORAMA** • **PACIFIC** • **NEMO** • **NEXT** • **SecREEts** • **COLLECTORS** • **MINLAND** • **Rosewood** • **CROCODILE** • **REMOVAL** • **X-Mine** • **SMART GROUND** • **MIN-GUIDE** • **IMPACTPapeRec** • **Industrial Minerals Association Europe (IMA-Europe) –** The European Minerals Day		
14:00 14:15	**Third keynote** – "Social Licence to Operate: the International Context"	**Sarah Gordon**, Managing Director, SATARLA
Session 4: International dialogue		
14:15 14:25	**INTRAW** – "Outreach lessons from other continents"	**Isabel Fernández**, European Federation of Geologists
14:25 14:35	**FORAM** – "EASME Cluster Event on Social Acceptance in the European Raw Materials Sector"	**Bas De Leeuw**, Managing Director of the World Resources Forum
14:35 14:45	**INTERMIN** – "Skills and training in community relations, mining conflicts and artisanal mining in the Andes"	**Luis Jordá Bordehore**, IGME
Questions and answers for session 4 (10')		
14:55 15:05	"EIT RawMaterials approach to SLO"	**Wesley Crock**, EIT RawMaterials
Questions and answers for the speaker (5')		
15:10 15:50	**Panel discussion** Moderator: **Pamela Lesser**, Senior of Researcher at the Northern Institute for Environmental and Minority Law (NIEM) and University of Lapland	Key note Speakers: **Masuma Farooki** **Rauno Sairinen** **Sarah Gordon**
15:50 16:00	Main conclusions/ Wrap-up of the event	**Marcin Sadowski**, Head of Sector B.2.4 EASME
End of the event		

APPENDIX B: PROJECTS EXPECTATIONS

The event was accompanied by a questionnaire related to social acceptance and public trust activities and to clustering actions. The scope of this questionnaire was to better understand projects' expectations and needs in participating in the social acceptance clustering event. Also it intended to know more about their current and future actions related to social aspect and clustering, and to get feedback based on their experience how to improve future social acceptance actions in Europe.

The questionnaire was composed of part A, which addressed questions related to project social acceptance and trust activities and part B, which required information related to project clustering actions. About 60% of the participants responded. We selected two questions out of fourteen that are further presented below.

- The first question relates to project expectations concerning participating in the Social acceptances event. Figure 1 illustrates that 12 out of 17 projects, which means 70% of the projects expressed interest in learning and exchanging knowledge. Then, 5 out of 17 projects, almost 30% showed interest in networking activities. And only 3 out of 17 projects (18%) were concerned with comparing how the problem of selection of relevant stakeholders and communication is dealt with in other projects.

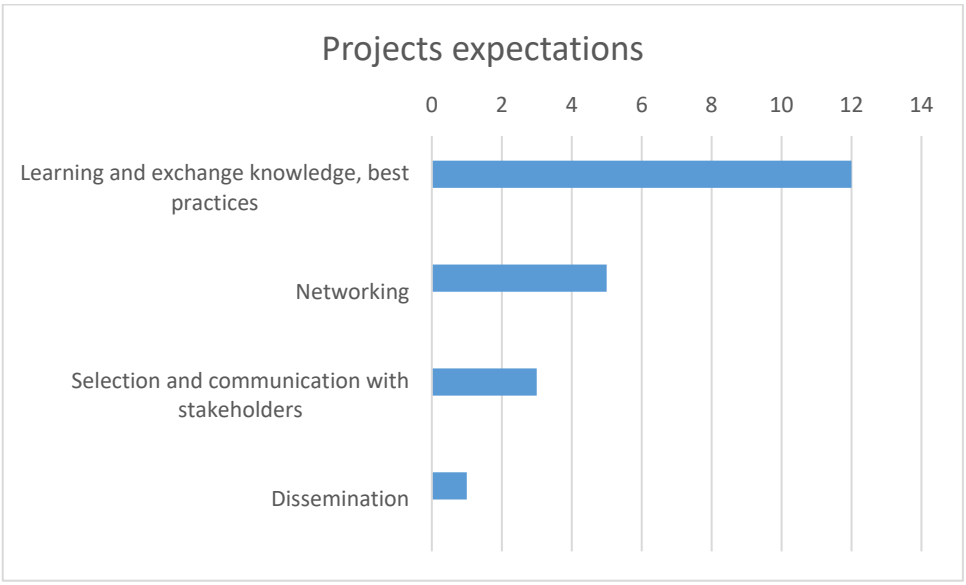

Figure 1. Project expectations from participating in the Social Acceptance event.

- The second question was about with whom the projects would like to meet at future social acceptance events. In figure 2 below, we can see that 14 out of 17 projects expressed the highest interest in meeting industry representatives (82%), followed by meeting government and governing bodies (12 out of 17 projects, 70%), and NGOs (11 out of 17 projects, 65%). Meeting beneficiaries of projects from different programs, representatives of DGs from the EC, and academia seemed to have a lower priority, which can be explained by the fact that most of the projects' activities are already directly linked to the above actors.

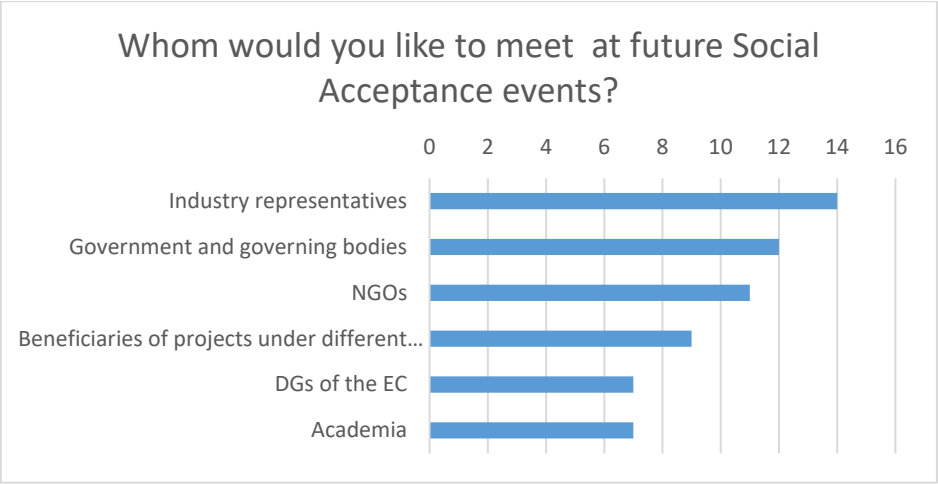

Figure 2. Whom would you like to meet at future Social Acceptance events?

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