

Recovery of Tungsten, Niobium and Tantalum occurring as by-products in mining and processing waste streams

(TARANTULA)

D8.9 Lessons learnt from the TARANTULA high-level multistakeholder transition arena gatherings and TARANTULA local events with respect to civil society engagement

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Abbreviations and acronyms

- CA Consortium Agreement
- CC Conference Call
- DoA Description of the Action
- EAB External Advisory Board
- EC European Commission
- EC-GA Grant Agreement with the EC
- FM Final Meeting
- FR Final Report
- GB Governing Board
- IPR Intellectual Property Rights
- PR Periodic Report
- PO Project Officer
- QAP Quality Assurance Plan
- SMS Strategic Minerals Spain
- TL Task Leader
- ToC Table of Content
- WP Work Package
- WPL Work Package Leader



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Executive summary

The current deliverable relates to TARANTULA task T8.3 – Civil society engagement and more specifically subtasks T8.3a - Local events and subtask T8.3b - TARANTULA high-level multi-stakeholder transition arena.

In task 8.3a, two relevant case studies were selected: the Barruecopardo mine of Saloro and the Penouta mine of Strategic Minerals Spain, both in Spain. At both locations, a series of local events was organized in which stakeholders were asked to provide their feedback on the mining activities on the one hand and on the development of TARANTULA technologies on the other hand. In task 8.3b, TARANTULA high-level multi-stakeholder transition arena, TARANTULA targeted to obtain buy-in from international stakeholders. This task was organized as a joint task with the H2020 NEMO and CROCODILE projects. 8 events were organized.

Based on the SLO work done in the TARANTULA, NEMO and CRODODILE projects, both on local level and in the high-level stakeholder panels, three core conclusions were drawn, which can be consulted in the conclusions section of the report:

- 1. The lack of a SLO (Social licence to operate) is considered as the number-one business risk for the mining and minerals producing sector. This reflects that, in general, there is a lack of "acceptance" for mining, both on a local level and on a societal level.
- 2. Based on a thorough literature review on SLO, it was concluded that the current concept of SLO is restricted to *merely seeking acceptance* of local stakeholders. Towards the future, it is of paramount importance to broaden the SLO concept, *i.e.*, to also look at the costs & benefits of mining on a societal level.
- 3. The Tarantula project was submitted within the H2020 framework. Project calls on (critical) raw material production specifically mentioned "to include a plan to communicate the added value of the proposal to the local communities and society for improving public acceptance and trust should be addressed by all the proposals. Participation of civil society from the start of exploration until after-closure activities in a process of co-design, co-development and co-implementation is strongly encouraged." While it is acknowledged that the points mentioned above are of importance in the process of obtaining and maintaining a social licence to operate for extractive activities, it is considered as being very difficult to communicate on the specific developments of EU projects to local communities, or to involve them in the co-design, co-development and co-implementation of these projects.



1. Introduction and Task description

The current deliverable relates to TARANTULA task T8.3 – Civil society engagement (M1-M54). (Task Leader: KUL/ Participants: SMS, EM, SAL). In view of the importance of the Social License to Operate (SLO) for setting up resilient EU supply chains for refractory metals (W, Nb, Ta), the TARANTULA project employed a pro-active civil-society engagement strategy. KUL used the proven transition-management methodology, as it had done successfully for building trust concerning Enhanced Landfill Mining (cf. KUL-coordinated EIP RMC EURELCO). Using this bi-directional communication/engagement methodology – rather than the typical one-way, top-down information strategy, which misses the SLO point completely – genuine support and buy-in for new developments can be obtained.

The task composed two subtasks, T8.3a Local events (KUL, SMS, SAL, EM) and Task T8.3b TARANTULA high-level multi-stakeholder transition arena (KUL).

In task 8.3a, to address and transcend potential "NIMBY'ism" on a local level, a series of local events was organized. Two relevant case studies have been identified: the Barruecopardo mine of Saloro in Spain and the Penouta mine of Strategic Minerals Spain (SMS). At both locations, a series of events were organized in which stakeholders were asked to provide their feedback on the mining activities on the one hand and on the implementation of TARANTULA technologies on the other hand.

In task 8.3b, TARANTULA high-level multi-stakeholder transition arena (KUL), TARANTULA targeted to obtain buy-in from international stakeholders. Therefore, KUL included the TARANTULA project in the agenda of the high-level multi-stakeholder "transition arena", which was set up in the H2020 projects NEMO (tailings reprocessing) and CROCODILE (setting up an EU cobalt value chain), in which KUL is also the SLO coordinator. The arena consisted of a limited group of influential decision makers (such as Associations and Technology Platforms, public authorities, other H2020 project coordinators and international NGO's). As such, the TARANTULA approach and solutions with respect to the discussion concerning the NIMBY syndrome and the SLO concept were discussed during 8 gatherings.





2. Results obtained

2.1. Local events

NOTE on COVID19 - During the period in which COVID19 struck Europe (March 2020-August 2021), no local events were organized. While for the high-level multi-stakeholder transition arena events could take place online, this was not possible for local events. At the end of the COVID crisis, for the industrial partners focus was on returning to normality, while local events were not a priority. Nevertheless, substantial time was still available after the COVID crisis to organize local events.

2.1.1. LOCAL EVENTS – SALORO

2.1.1.1 INTRODUCTION TO THE SALORO CASE STUDY

Saloro owns the Barruecopardo mine, located in the Barruecopardo village near Salamanca, Spain. The Barruecopardo village has been a mining community since a very long time. The mine was already operational in the '60s of the 20th century, when about 1000 persons were working at the site. In '82, the mine was closed. In 2008, plans were made for the formation of the current Saloro company and the re-opening of the mine. The current mine is operational since 2019 and about 200 persons work at the site.

The case can be considered as an example of how positive interaction with stakeholders can lead to a firm "social-license-to-operate". As the village has a long history of mining, the reopening of the mine was in general well accepted and interaction with local/regional stakeholders is considered to be positive. A lot of people in the area also work in the mine. The mine aims to preferentially contract local citizens. Pro-active engagement of various actors in civil society was initiated already at the start of the project in 2008. In this way a longlasting trust relationship was built with the local community. Interaction with different stakeholders is very well developed at Saloro. First interactions with stakeholders were established in 2008, at the early start of the development of the company and have continued during the different phases of exploration, permitting, plant construction and operation of the mine. A very high effort was made since 2008 to interact with different stakeholders, both to explain, openly, the activities of the mine, including possible problems and risks. The company gives key importance in listening to specific concerns of the different stakeholders and to jointly work towards solutions for specific concerns of the stakeholders. The company also stresses the value of the involvement of its stakeholders (e.g. NGO's) in the development of solutions for specific problems as stakeholders are commonly experts in their field (e.g. environmental monitoring etc.). The mine prefers to be very open in its communication... Saloro is also very present in the local media. The mine is located close to a natural reserve (Parque natural do Douro) and is located in a "Zona de especial protección para las aves" or "ZEPA", a special protection area for birds. Saloro is highly involved in the protection and





research of wildlife in the mining area. The company has a very good cooperation with universities. A lot of studies with respect to the mine have been published.

From the start-up of the company in 2008 upto now, regular meetings have taken place with:

- the majors of the 13 villages surrounding the mining are. During this meeting, majors have been informed and involved in all the different steps of setting up the mine, going from exploration to permitting to development of the mine and plant. (organized since 2008);
- the "comité social", which is a non-political committee with representatives of different stakeholders, i.e. the local priest, representative of the youngsters, women, companies, director of the local high school, etc. (organized since 2008). Gathers every 6 months;
- specific meetings with ecological/environmental organizations in the region of Salamanca such as Ecologistas en Acción, Equo, Los Verdes, Greenpeace, WWF Seo BirdLife;
- Different events are being organized in which the company opens up the doors allowing people to visit the facilities. An example is the Saloro Open doors (Puerta Abierta). At these meetings, everybody is welcome, but most people are from the surrounding areas;
- Specific meetings for certain focus groups: Red cross; local medical care (doctors, nurses, guardia civil etc.).

2.1.1.2 LOCAL EVENTS ORGANIZED DURING THE DURATION OF THE TARANTULA PROJECT

At Saloro, close interaction was maintained with different groups of (local) stakeholders also during the duration of the TARANTULA project, in both public events or in bilateral meetings. The main event organized was the yearly "open days" in which (local) stakeholders are invited to visit the Barruecopardo site, to ask questions and express concerns. The event was organized in December 2019 and December 2022, but did not take place in 2020 and 2021 due to the COVID crisis. In 2019, a researcher from KUL attended the event and got acquainted with the local context of Saloro's operations in the area. Next to meetings with the staff of Saloro, he had informal contacts with several local residents of Barruecopardo and a short 'meet and greet' with Jesús María Ortiz Fernández, mayor of Barruecopardo and regional representative in the Salamanca government.

After the COVID crisis, different bilateral meetings were organized by Saloro, e.g. with local and regional government representatives and the Guardia Civil (June 2022). Apart from this, Saloro interacted intensively with local stakeholders through organization of or participation in different social events with the local communities, i.e. local events organized by Guardia Civil (October 2022), the local church (December 2022), the Barruecopardo community (December 2022) or the local red cross (February 2023). In addition, an event was organized





for the celebration of the "Día de la Mujer" (March 2023). The activities of Saloro are were well covered in local media ($\underline{1}$ (December 2022), $\underline{2}$ (February 2023)).

In June 2022 Saloro also received the TARANTULA consortium for the TARANTULA consortium meeting. All TARANTULA partners were informed in detail about the activities of the company through a company ppt presentation, a plant visit and a Q&A.

In April 2023, Saloro participated in the event "Social License to Operate in mining sector and LCA methodologies for (re)processing of low-grade primary and secondary resources", organized by the TARANTULA project. A presentation was given by Agne Ahlenius, CEO of the company (<u>1</u>). The report of the event is available on the TARANTULA website (<u>2</u>).

2.1.2. LOCAL EVENTS – STRATEGIC MINERALS SPAIN

2.1.2.1 INTRODUCTION TO THE STRATEGIC MINERALS SPAIN CASE STUDY

Strategic minerals Spain (SMS), part of Strategic minerals Europe, owns the Penouta mine in the municipality of Viana do Bolo, Ourense, Spain. Apart from this, the company has different other projects in the prospection phase.

The first production at the Penouta mine started in 2018. At the site, a historical mine was located. A processing plant was established for production of a Nb-Ta concentrate, first for the reworking of the historical tailings and subsequently for the treatment of newly mined ore. Sn and Ta/Nb concentrates are being produced. The latter contains about 16% Nb and 16% Ta. The plant treats about 3Mtonnes/year of ore

Before starting operations, public consultations were held as part of the environmental impact assessment for the permitting of the mining and processing plant. Corporate social responsibility documents have been developed and are available at the company website (<u>https://www.strategicminerals.com/</u>). Once the plant was fully operational, increased interaction with stakeholders was organized. In general, the mining activity is well received in the area, mainly also because the region has a strong history in mining. About 70 persons work at the mine, 70% is from within 20 kilometers from the mine, 85% from the broader area.





2.1.2.2 LOCAL EVENTS ORGANIZED DURING THE DURATION OF THE TARANTULA PROJECT

At the start of the project, the mining project was still under development and no local events were organized. Due to COVID19, no events were organized during the construction and ramp up of the production plant. Also post covid, the company priorities were on starting up of the processing plant. Once the production process was established, events were organized from the second half of 2022 onwards.

A first event was organized in October 2022. Technical Director of SMS Francisco García Polonio, participated in the 2nd 'Strategic Minerals for Galician Industry' Conference organised by the Official Galician Chamber of Mining (COMG) and Sustainable Mining of Galicia. The talk given included a short explanation of the TARANTULA project. The event was attended by Mining professionals and geologists active in the region, as well as persons from the Gallegan administration. The day after the presentation, attendees (professionals and Administration) were invited to visit the mine. Also for this occasion the TARANTULA project was presented. The event was covered in the local media (1, 2, 3)

In April 2023, SMS participated in the event "Social License to Operate in mining sector and LCA methodologies for (re)processing of low-grade primary and secondary resources", organized by the TARANTULA project. A presentation was given by SMS (<u>1</u>). The report of the event is available on the TARANTULA website (<u>2</u>).

In June 2023, different activities were organized. An open day was organized for the citizens living in the vicinity of the mining operations. In addition, SMS participated in an event organized to present the Galicia 2030 Sustainable Mining Impulse Agenda. Over 100 industry representatives attended the event. SMS shared its vision in the round table discussion "Challenges of reconciling progress and sustainability in the promotion of Galician mining." (<u>1</u>). In addition, in June, attention was drawn on the sustainable process development at SMS (incl. the TARANTULA research agenda) during the Global environment day (<u>1,2,3</u>)

2.2. TARANTULA high-level multi-stakeholder transition arena

An overview of the events organised for the high-level multi-stakeholder transition arena is given in Table 1. Events were organised in collaboration with several other EU projects (NEMO, CROCODILE, SECREETS, MIREU, CHROMIC, SULTAN, INFACT, NEXT, ION4RAW, RE-ACTIVATE, MakelCTFair). Key experts from the private sector, governmental organisations, research institutions, NGOs, international organisations and academia were invited to discuss the drivers and barriers for SLO in Europe. After each event, a short report was drafted and published on the TARANTULA project website.

As the high-level multi-stakeholder arena is a joint-initiative with the H2020 NEMO and CROCODILE projects, the text of this deliverable is also used for the preparation of the corresponding deliverables in the NEMO and CROCODILE projects. **Detailed reports of the events have been published on the TARANTULA project website and have been published**





as part of a public deliverable of the H2020 CROCODILE project (available <u>here</u>) and are – for the sake of repetition – not included here.

Nr	Date	Title	Organizing projects	Number of participants
1	6/06/2019	Ensuring that 'Social License to Operate' (SLO) is Adaptive and Resilient'	Crocodile, Nemo, TARANTULA, Mireu,	32
2	8/08/2019	Gearing Extractive Industries Towards Sustainable Development	Crocodile, Nemo, TARANTULA, Mireu,	19
3	23/09/2019	The secrets of the Social License to Operate	Crocodile, Nemo, TARANTULA, SecREEts	16
4	22/09/2019	Public acceptance of mining and recycling	Crocodile, Nemo, TARANTULA, Chromic, Infact, SrecREEts	75
5	12/03/2020	The Green transition challenged by the metal supply chain	Crocodile, Nemo, TARANTULA, SecREEts, Next, Mireu, Ion4raw, MakeICTFair	65
6	24/04/2021	Recycling mining waste – a new business?	Crocodile, Nemo, TARANTULA, SMART, Re- activate, SULTAN	220 (400 subscribed)
7	10/03/2022	Global perspectives on reprocessing of mine tailings	Crocodile, Nemo, TARANTULA	23
8	17- 18/5/2022	"(Re)mining extractive waste, a new business?"	Crocodile, Nemo, TARANTULA	175

Table 1: High-level multi-stakeholder transition arena events

Workshop on "The way forward for SLO in the EU"

On June 6, 2019, a **first meeting** of the high-level expert panel was organised in the aftermath of the third MIREU workshop on the topic of **"Ensuring that 'Social License to Operate' (SLO) is Adaptive and Resilient"**. In an optional session of the workshop, "The way forward for SLO in the EU" was discussed intensively by a multi- and transdisciplinary audience coming from private sector, government, academia, civil society and international organisations. A more detailed report can be found on the TARANTULA website (<u>1</u>). A total of 32 persons participated in the workshop.

Gearing Extractive Industries Towards Sustainable Development – webinar

One month after the first session, on July 8, 2019, the above lessons learned from the workshop were debated with the participants during a webinar. In addition, Dr. Antonio Pedro introduced the international framework and presented the report on "Mineral Resource Governance in the 21st Century – Gearing Extractive Industries Towards Sustainable Development". In this report it is suggested to adopt the concept of 'Sustainable Development License to Operate' (SDLO) which addresses the nexus of environmental, social and economic concerns at multiple levels and scales. A more detailed report about the webinar, together





with the background documents can be found on the TARANTULA website (2). A total of 19 persons participated to the workshop; 12 were excused.

The secrets of the Social License to Operate - webinar

As a third activity, the members of the high-level expert panel gathered for an introduction to the SLO strategy of the SecREEts project. In a brief webinar on September 23, 2019, their strategy was clarified and compared to the model proposed by Boutilier and Thomson (2011). A more detailed report about the webinar, together with the background documents can be found on the TARANTULA website ($\underline{3}$). A total of 16 persons participated in the workshop; 14 were excused.

Public acceptance of mining and recycling – Satellite event during Raw Material Week

On November 22, a satellite event during the EU Raw Materials Week dealt with the topic of "Public Acceptance and Social Impact of Mining and Minerals Recycling". This activity was organised by a broad cluster of EU H2020 projects and aims to discuss different viewpoints on social acceptance from industry, governments, NGOs, local citizens, academia and international institutions. One speaker per sector presented one key recommendation for the European Commission to consider when dealing with public acceptance and social impact of mining and minerals recycling. More information about the activity can be found on the TARANTULA website (<u>4</u>). 75 participants attended the event.

The Green transition challenged by the metal supply chain

On March 12, 2020, the fifth meeting of the high level expert panel focused named "The Green transition challenged by the metal supply chain" focused on "how will Europe become climate neutral by 2050? Challenging the EU Green Deal". An extensive report, incl. executive summary, can be found on the TARANTULA website (<u>5</u>). The event was organized in the Flemish parliament shortly before the COVID-19 lockdown measures were implemented. This caused many cancellations, but the event took place in the presence of 65 of the 150+ registered participants; 9 EU and Flemish projects presented a poster during the event.

Recycling mining waste - a new business? - webinar

On the 27th of April 2021, the event "Recycling mining waste – a new business?, was organized. The event was organized by the NEMO project, in collaboration with TARANTULA and several other projects (SULTAN, CROCODILE, RE-ACTIVATE, SMART). The event, which was organised as a zoom-event, attracted more than 400 participants of which 220 attended online, while others received the recording afterwards. The goal was to present novel solutions for the treatment of mining waste. Cases from historical and present-day mining sites were presented. The target public comprised stakeholders from industry, academia, government and civil society. A report of the event is available on the TARANTULA website (<u>6</u>).





Global perspectives on reprocessing of mine tailings

After a period of covid-related restrictions, the high-level expert panel gathered again in person on March 10, 2022. The goal was to discuss global perspectives on reprocessing of mine tailings. An international group of 23 selected experts from 16 different countries shared their personal views, *i.e.*, without officially representing their institution (international organisation, private company, civil society organisation or research centre). The objective was to find common ground and to enable the elaboration of specific policy recommendations that could facilitate the European Commission in devising strategies for the reprocessing of mining waste. A report of the event can be found on the TARANTULA website (<u>7</u>).

Symposium "(Re)mining extractive waste, a new business?" including round tables with conclusions of high level stakeholders panel

On May 17-18, 2022, 175 participants discussed the technical, economic, legal and social aspects with respect to the potential reprocessing of extractive waste in Europe at the event (Re)mining extractive waste, a new business? (https://re-mine.eu/), for which TARANTULA acted as a supporting partner. In a separate session, round tables were organized at which the conclusions from the previous high level expert panels were presented, with the aim of receiving feedback from the symposium participants. 80 persons attended the round table discussions. Conclusions from the round tables as well as a summary of the symposium closing debate can be found on the TARANTULA website (<u>8</u>).





3. Conclusions

The current deliverable relates to TARANTULA task T8.3 – Civil society engagement. The task composed two subtasks, T8.3a Local events (KUL, SMS, SAL, EM) and Task T8.3b TARANTULA high-level multi-stakeholder transition arena (KUL). Task 8.3b was organized as a joint task with the H2020 NEMO and CROCODILE projects.

Based on the SLO work done in the three projects (TARANTULA, NEMO and CRODODILE), both on local level and in the high-level stakeholder panels, the following, general conclusions were drawn.

Conclusion nr. 1: The lack of a SLO (Social license to operate) is considered as the numberone business risk for the mining and minerals producing sector. This reflects that, in general, there is a lack of "acceptance" for mining, both on a local level and on a societal level.

While in Europe several companies can be considered as "good" examples for the establishment of a sound SLO, in other cases interaction with local communities and society as a whole is clearly very limited or even restricted to obligatory hearings of local stakeholders required during permitting procedures. It is clear that in these cases a model of open communication and stakeholder involvement would benefit both the companies and the stakeholders. Providing more visibility to cases of "good SLO practice" can be advantageous to the sector, as examples of good practices can be replicated to other cases which currently lack a SLO. In addition, these cases of "good SLO practice" can help in improving the public image of the mining sector as a whole.

Describing what is meant with "good SLO practice" goes beyond the scope of this report but, nevertheless, a general description of good practice can be given. Before doing so, it has to be acknowledged that local conditions can highly impact SLO. Important factors to be considered are the location of a mining site (remotely located versus located in a populated area), the history of mining in an area (regions with a long mining history tend to be more positive towards mining while regions where no mining has taken place yet tend to be more critical), and the specific history of a site (difficulty to regain trust if a previous owner has broken that relationship of trust).

On a local level, examples of good SLO practice generally involve regular dialogue and involvement of different types of stakeholders, both on local, regional, country and even societal level. Dialogue is typically initiated in the early stages of the mining development process, *i.e.*, in the exploration phase, long before the actual mining activity is initiated. Dialogue then continues throughout the whole process of permitting, mining construction, operation, closure and post-closure. Interaction with stakeholders is typically open, honest, describing all possible risks, problems and impact the operation will pose throughout its life time and how these risks are dealt with. A transparent, open dialogue typically leads to long-term relationships of trust between the company and its stakeholders. Dialogue is not restricted to one-side communication but involves listening to concerns of stakeholders and especially also the involvement of stakeholders in the solutions created. In this context, companies even consider that both local actors and societal actors, such as environmental NGO's, have specific knowledge (*e.g.*, with respect to monitoring possibilities or





environmental mitigation), which is not available at the company and can thus actively contribute to developing solutions for certain risks posed by the operations. In a model of open dialogue, dialogue is open for all stakeholders and not upon invitation only, meaning that also very critical stakeholders are involved, as opposed to cases where these actors can be even criminalised. In examples of "good SLO", in general, the presence of a company is considered as a benefit, going much beyond providing employment for local citizens during the period of mining activity. Instead, a benefit is created on a local, regional and even country or societal level (*e.g.*, provision of key metals for green transition) and this benefit continues after mine closure, *e.g.*, through development of economic activity at the mining site post-closure. Also with respect to environmental aspects, active contribution to enhancement of biodiversity during operation and after closure is considered. The liability for the site after closure is considered as long-lasting or even permanent.

Conclusion nr. 2: Based on a thorough literature review on SLO, it was concluded that the current concept of SLO is restricted to *merely seeking acceptance* of local stakeholders. Towards the future, it is of paramount importance to broaden the SLO concept, *i.e.*, to also look at the costs & benefits of mining on a societal level.

The image of society with respect to the mining sector -i.e., a "dirty, polluting industry" - clearly does not correspond to the reality in Europe today. This traditional image is still based on the EU mining activity of the 20th century. Towards the end of the 20th century, EU policy was mainly directed at abandoning of mining in the EU and focussing towards securing supply from outside the EU. This has led to the current situation in which the general public is not informed at all about the importance of mining for the production of metals and minerals for our society. While in the EU mining activities have tended to downsize (cf. no new mines have opened in Europe during the last 10 years), mining has boomed in Africa, Latin-America and Asia in the early 21st century. Regrettably, mining in these areas is often done in ways that would not be acceptable in Europe. The poor social and environmental credentials of mining outside of Europe have had a detrimental impact on the public opinion towards mining in general, even though mining in Europe is performed in sync with the strict EU and national legislation.

Today however, one must acknowledge that there is an urgent need for being more selfsufficient with respect to the production of metals and minerals – especially the vital energytransition metals such as copper, lithium, cobalt, nickel and rare earths. Hence, there is a clear mismatch between the EU's ambition to revive mining in the EU (*e.g.*, the recent announcement by the European Commission to launch a Critical Raw Material Act) and the general, societal feeling towards mining in Europe. There is clearly a lack of social license to operate for the mining sector in the EU as a whole. An open debate on the requirement of mining in the EU for the provision of (cleantech) metals for the transition to a climateneutral economy, fully acknowledging the impact and risks, but also demonstrating how mining can be done in a responsible way, is essential to obtain a social license to operate from European citizens.

Conclusion nr. 3: The Tarantula project was submitted within the H2020 framework. Project calls on (critical) raw material production specifically mentioned to:





"include a plan to communicate the added value of the proposal to the local communities and society for improving public acceptance and trust should be addressed by all the proposals. Participation of civil society from the start of exploration until after-closure activities in a process of co-design, co-development and co-implementation is strongly encouraged."

While it is acknowledged that the points mentioned above are of importance in the process of obtaining and maintaining a social license to operate for extractive activities, it is considered difficult to communicate to local communities on the specific developments of EU projects, or to involve them in co-design, co-development and co-implementation. This is due to the following reasons:

- As mentioned above, in many cases there is a lack of a serious dialogue between the involved company and the local stakeholders. In these cases, it is important to first establish a good dialogue with respect to the main activities of the company, their risks, mitigation measures and to direct specific concerns of stakeholders. In these cases, communication with respect to participation or activities in EU projects would not offer much added value to stakeholders, and might even be perceived as greenwashing or at least taking away attention from the real issues that affect stakeholders.
- Even when a good dialogue and constructive relations with local citizens are in place, it is extremely important for the companies to maintain this *status quo*. Involvement of a new actor (*i.e.*, a EU project partner) can impact these relations, also in a negative way. Considering that SLO is the number 1 risk for mining companies, involvement of external actors should thus be done with the necessary precaution. Communication about new developments in EU projects can also create false expectations as, in general, the targeted technologies are still under development (relatively low TRL). Hence, it cannot be considered as a company decision to implement those technologies that have not yet been demonstrated at a very high TRL. Communication and involvement of stakeholders should, therefore, be restricted to activities that offer a clear benefit or have a clear impact on these stakeholders.

Disclaimer: The conclusions presented in this section reflect the personal opinion of the authors and cannot be considered as the opinion of the TARANTULA projects or its partners. The conclusions neither reflect the author's opinion on a specific case studies as analysed within the TARANTULA project or elsewhere, but should rather be considered as a view on SLO in the mining and metal production sector, based on a variety of SLO related research and activities performed within the framework of several EU projects, including the H2020 NEMO, CROCODILE and TARANTULA project.

