



PACIFIC

Passive seismic techniques for environmentally friendly and cost efficient mineral exploration

D6.3– Recommendation for improved communications

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Description

Set of recommendations aimed at improved communications in the future.

Dissemination Level

PU	Public	X
CO	Confidential, only for members of the consortium (including the Commission Services)	

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Executive Summary

This report summarises recommendations for improved communications surrounding mining-related activities, based on an overview of existing communications through a behavioural science lens (Deliverable 6.1), and a computer-based behavioural experiment run in 2019 (Deliverable 6.2).

The work was undertaken by the Behavioural Research Unit of the Economic and Social Research Institute, a research group specialising in understanding how people process complex information and use it to make decisions. This is pertinent in the context of the PACIFIC project as people's comprehension of mining-relating activities (and attitudes towards the same) relies on individuals processing complex information about risks and benefits from a range of sources.

The goal of this research is not to design communication tools that will best ensure that a company can secure a 'social license to operate'. Rather, it is to inform best practice for communication strategies that promote understanding and empower stakeholders to make well-informed decisions, whatever the outcome may be. This is particularly important at a time where misinformation is becoming more widespread.

Herein we have made a suite of recommendations for improved communication about mining-related activities that may be utilised by a range of end-users (agencies, geological surveys, companies, etc.). For this project the research has primarily considered the general public as the target audience. That said, many of the findings presented have relevance to communications with other stakeholders, such as shareholders, policy makers, and regulators.

As mentioned above, the recommendations are based off an overview of existing communication materials, as well as the results of a first behavioural experiment. This experiment had some unexpected findings, which will be investigated further in follow-up experiments in early 2021. The results of these may provide further insights that will be communicated in due course.

1 Introduction

As part of Work Package 6 (Social acceptance & perception of risk for mining activities), the Economic and Social Research Institute (ESRI) undertook an evaluation of existing forms of communications about mining-related activities (Deliverable 6.1) and used insights from this to design the first of a series of behavioural experiments, which tested different ways of presenting online information (Deliverable 6.2).

This report summarises some of the main findings in the form of recommendations for improved future communications regarding mining-related activities. Due to the nature of the methods and experiments used, these recommendations relate specifically to written communication (including websites, brochures, leaflets, publications etc.).

Although the research was undertaken in an Irish context, many of the recommendations can be extended to other countries/scenarios – although superficial attitudes to topics such as mining may vary in different cultural contexts, the more fundamental behavioural psychology underlying how information is processed and used to form attitudes is less likely to vary. Indeed, many of the recommendations outlined may even be extended to topics beyond that of mining. Further, it should be noted that the scientific experimental method used allows the targeting of specific hypotheses regarding these underlying psychological mechanisms, in a way that a simple survey cannot. Surveys are better suited to capturing a snapshot of opinions and attitudes at a particular point in time, which requires a large representative sample in order to be accurate, while behavioural experiments are better suited to exploring underlying causal mechanisms by comparing different experimental conditions, and are not as reliant on large samples. Deliverable 6.2 provides detailed information about the experimental set-up, analysis and results. This report is limited to the recommendations from the results of D6.1 and D6.2.

Experimental work for this work package is ongoing, due to delays caused by COVID-19 and the decision to run follow-up experiments. As such, this report should not be seen as the definitive output of this research, but rather a work-in-progress summarising some useful results to date. Future relevant findings will be disseminated in due course, through direct communication with PACIFIC partners, through academic publications, and via the PACIFIC and GSI websites.

2 Summary of recommendations

2.1 Recommendations based on review of current materials

As part of the preparation for experimental work, contact was made with several mining and exploration companies operating in Ireland to request some of their communication materials provided to the public, particularly in relation to mineral exploration. There were two aspects to examining these materials: (a) to inform the content of the information to be included in the behavioural experiment, and (b) to assess the quality of the information currently provided. Some recommendations can be made based directly on observations from this initial exercise.

2.1.1 Recommendation 1: Create a central, neutral online resource with information about mining-related activities.

One of the main findings of the initial evaluation of existing communications was the lack of a single, central online resource providing neutral information about mining-related activities in Ireland. Although the Geological Survey website contained some information on the topic, materials were split between different sections of the website it would not be clear to a layperson how they relate to each other – for example, information about minerals and their uses was contained in a technical section about geology, and was not clearly connected to other information about modern mining.

The low usage of a central resource may reflect lower internet use in rural areas (where mining exploration projects tend to be located), as well as the tendency of companies to rely more on face-to-face communication to establish local relationships. However, as groups (sometimes originating outside the local area) organise themselves on social media platforms, and as more people turn to the internet for information, the need for a credible, impartial online resource will become more pressing.

Although this recommendation is specific to an Irish context, an initial review of some international information sources suggests it is likely that a similar situation is present in other countries.

2.1.2 Recommendation 2: Keep content of materials clear and concise, omitting overly technical information

The quality of existing information materials reviewed varied between different companies, but in general there was scope for improvement with regards to clarity. Some of the materials reviewed were overlong or included unnecessary technical detail that would not be understood by a lay reader (e.g. technical information about water usage in scientific units). It may be useful to have information reviewed by a non-scientific reader to avoid this. Some more basic materials examined also contained spelling and grammar errors which may hinder fluency and negatively affect credibility.

Simple modifications to the way information is presented can have significant impacts on how well that information is processed. Using bullet points, separating information into clear categories or themes, reducing text and using headings can all improve the absorption of information. These techniques should be used where appropriate.

If more technical documents are required for specific stakeholder groups (e.g. environmental groups, regulators) these should be provided separately and in addition to general non-technical documents.

2.1.3 Recommendation 3: Make use of visual information

A positive feature of some of the materials examined was the use of visual information, such as images depicting various mineral exploration techniques. Studies have shown the use of pictures can grab people's attention and improve comprehension and recall of information. The use of infographics and video should be considered as a tool for conveying more complex information.

2.2 Recommendations based on first behavioural experiment

An initial behavioural experiment was run in 2019 to gauge how the format of information provided on a simple webpage affects people's understanding and perception of mining-related activities (see D6.2). The experiment was run face-to-face in County Carlow, a rural area with no previous history of mining-related activities. Although some of the research questions addressed in this experiment require further examination through follow-up experiments, some initial recommendations can be made based on what has been learned so far.

2.2.1 Recommendation 4: Do not assume people have strong preconceived ideas about mining

Participants in the experiment reported very low prior awareness of mining-related activities in Ireland, and held much more neutral attitudes to mining than was anticipated. Few participants appeared to be strongly biased against the sector, and acceptance of hypothetical mineral exploration scenarios was high.

This may appear to stand in contrast to on-the-ground and online reports of increasing resistance to mining-related activities. It may be that opposition groups are particularly vocal while those holding a more neutral or positive views are less likely to voice their position. Alternatively, it may be the case that the first time people are exposed to information about a mining development will be particularly influential in forming their views. Certainly, it is likely that, once formed, attitudes will be difficult to change (this will be investigated in future experiments). It should not, however, be assumed that negative attitudes towards mining are pre-existing in a 'naïve' population, at least in an Irish context.

This further highlights the importance of impartial agencies such as Geological Survey Ireland in educating the general public on mining-related topics, so that a lack of education/information is not exploited by other interested parties. All the more so as information was seen as more trustworthy if it originated from GSI rather than a fictitious mining company.

2.2.2 Recommendation 5: Do not assume objection stems from a lack of understanding

Contrary to expectation, there was no obvious relationship found between participants' comprehension and their perception of mining-related activities. This challenges the view that that opposition is rooted in an outdated view of the industry, and that better education would necessarily result in lower opposition.

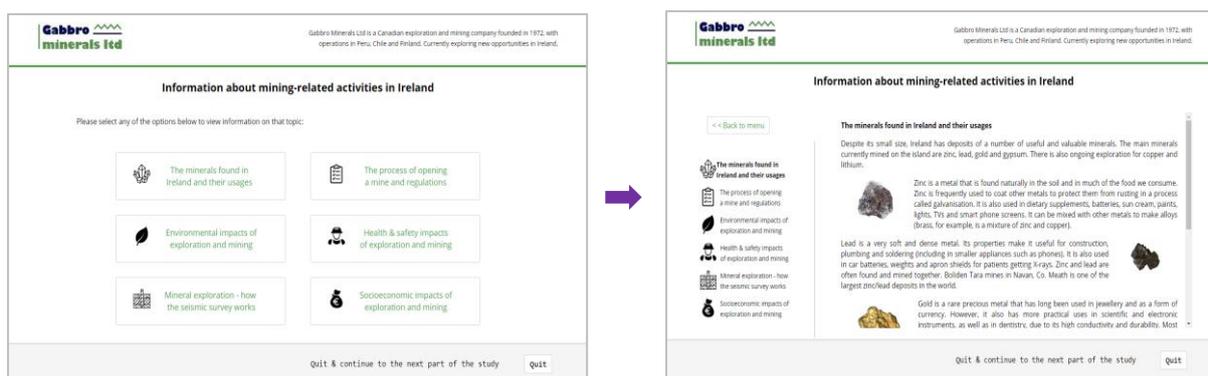
Acceptance was more strongly related to how attached participants felt to their local area, with those who felt more attached being less likely to accept mineral exploration. This supports a view in the social science literature that so-called NIMBYism would be better thought of as a place-protective action, based on people's attachment to or identity with a place, and not as the result of an information deficit.

Attempts to bridge the gap with communities of mining-related developments should therefore focus not solely on education/information, but rather on exploring ways in which a project can fit in with the local population’s evolving sense of place identity.

2.2.3 Recommendation 6: Think about the structure of information webpages

The primary experimental manipulation in this first study was the format of information provision on a simple webpage. Half the participants were first presented with a menu page from which they could search for information by topic (“search condition”, see Figure 1). The other half did not see the menu page, but instead had to click through the topics in a pre-defined order (“see-all condition”).

“search”



“see-all”



Figure 1. Screenshots of the information webpage. In the ‘search’ condition, participants could select and read topics in the order of their choosing using a menu page. In the ‘see-all’ condition, participants were provided the information in a pre-determined order.

This part of the experiment was designed to test the hypothesis that self-led learning might increase comprehension by allowing greater control, but might impair comprehension by making individuals more likely to succumb to confirmation bias – the tendency to seek out information that confirms one’s prior beliefs. The lack of strong pre-existing attitudes towards mining in the naïve sample meant this hypothesis cannot yet be confirmed or refuted until a repeat experiment is conducted in an area with a history of mineral exploration.

The experiment did deliver the unanticipated result that participants who were provided information in a prescribed order read this information more comprehensively than participants who were allowed to navigate this same information in the order of their choosing via a menu page. This result is likely

to be at least partly due to the way the experiment was designed, but it is also possible participants felt more compelled to read all the available information when it was all laid out in front of them, or that once they actually started reading they were inclined to continue.

Further work is required before any concrete recommendations can be made with regards to how best to structure information online. However, results to date highlight the effects these apparently simple decisions can have on the comprehension of information. While there may be an inclination to compartmentalise information into easily digestible segments, consideration should be given as to how this can be done while still encouraging individuals to explore as much diversity of information as possible.

As part of the application of these recommendations GSI will also produce a user-friendly handbook (rather than simply a deliverable report) which will be available for download online. This will use the improved information on the GSI Minerals Section webpages as a case study to demonstrate how the recommendations can be implemented in a practical way. The handbook will be available on the GSI and PACIFIC websites.

3 Conclusion

This report contains six initial, broad recommendations for improved written communications about mining-related activities. Some of these recommendations relate to communications from a range of sources including mining and exploration companies, while some are more specific to the work of local/regional/national agencies.

The work presented in D6.1 and D6.2, along with the recommendations above, can help to guide information providers. From the perspective of national agencies (such as the Geological Survey) it is essential that unbiased, factually correct, but most importantly accessible information is available to all stakeholders in relation to activities such as mining. The format and design of this information is similarly important to ensure the highest level of comprehension possible.

Geological Survey Ireland is now implementing the recommendations above as a pilot study. The GSI Minerals Sections in collaboration with the GSI Communications Unit and colleagues in the Department of the Environment, Climate and Communications are currently developing materials to provide improved information to the public about mining in Ireland. This will be further informed by the continuing work in PACIFIC.

The recommendations listed reflect work done to date for Work Package 6 of PACIFIC. Further experimental work may lead to additional or revised recommendations, which will be communicated in due course.

3.1 Future work

As mentioned above, there was an unexpected lack of pre-existing attitudes towards mining in the Carlow sample for the first experiment. This experiment will therefore be repeated in a second area where potential mining activities have been identified and where there are opposition groups active. The results of the two studies will then be compared. The repeat experiment is planned for the first half of 2021 but will be dependent on COVID-19 restrictions.

To complement this face-to-face study, a separate online experiment is currently being designed to investigate the extent to which the *first* information people receive influences their long-term attitudes towards mining-related activities, and whether opinions formed after viewing biased information can be changed or “corrected” by subsequent impartial information. This experiment will be run in early 2021.