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REPORT ON SOCIO-ECONOMIC INDICATORS, DRIVERS AND BEST PRACTICE ACROSS THE CHOOSEN SITES

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SEVENTH FRAMEWORK PROGRAMME

This report has been submitted to the European Commission for evaluation and for approval. Currently the content of this report does not reflect the official opinion of the European Union. Responsibility for the information and views expressed in the report therein lies entirely with the author(s).

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Summary

This report provides background information on the socioeconomic impacts of mining, including how mining companies develop social responsibility programs and how they engage with different stakeholders. Assessing stakeholder theory, including how stakeholders interact and influence each other, is key to understanding the role of Corporate Social Responsibility (CSR) within a company and is also discussed within the context of this report.

Site summary

The ImpactMin demo site descriptions are provided within this report as a prelude to helping create a better understanding of vital background information that will aid the interpretation of the findings of the research that has been carried out. This work will be presented in the second ImpactMin report (WP3.2). WP 3 has seven demo sites across five different countries (Bosnia Herzegovina, Romania, Russia, Sweden and the UK).

The Vihovići demo site is an abandoned coal mine on the edge of the city of Mostar, in Bosnia Herzegovina, that closed back in 1991 prior to the war commencing. During the conflict in the former Yugoslavia (1992 – 1995), the pit at Vihovići became a rubbish dump, exacerbating the environmental problems already at the site, such as issues of slope stability and coal seams spontaneously burning underground (KfW, 2007). The

site has since been remediated although there are still issues of slope stability and illegal houses being built right on the edges of the pit that need resolving before any alternative land-use can be made. Extensive work has been undertaken by Fichtner to extinguish the underground fires and appears to have been successful. There are continuing problems that relate to the flow of underground water to the River Neretva in Mostar.

Three of the demo sites are in the Southern Ural Mountains in Russia: Gay and Mednogorsk by the Kazakhstan border in the Orenburg Oblast region and Karabash in the Chelyabinsk Oblast region. Gay is a mining area and Karabash and Mednogorsk are copper smelter plants producing sulphuric acid as a by-product. All three of the demo-sites in Russia are reasonably small towns that have a heavy reliance on mining or the smelter as their main source of employment. As mono-industrial towns, severe problems are created when that industry declines or closes. This happened in Karabash when the smelter closed from 1991-1997 due to the environmental issues it was creating and the associated health implications. The community were left with the environmental issues that the smelter had created and no jobs or economic benefits. The alleged view of people in the town was that they had the environmental pollution anyway (there was no clean up attempt made during the period of closure) and they would rather the smelter reopened and they had jobs. The smelter has had a profound effect on the environment around Karabash, with photos dating back from before the smelter was constructed in 1910, showing vegetation all around Karabash Mountain that is now devoid of all but the smallest silver birch trees. On entering Karabash, there are large tailings waste dumps and slag heaps, alongside evidence of acid-mine drainage into local streams. The demo site at Mednogorsk, another smelter town, does not show the widespread environmental damage that is evident at Karabash. The smelter can, however, be seen emitting smoke that due to the short length of the chimney stack, and the fact that the town lies in a valley, appears to then in-case the town in smoke. The town has a much more affluent feel to it than Karabash. Gay also has a relatively affluent feeling compared to Karabash, with copper, gold and iron mining ongoing close to the town.

Roşia Montană, Romania, has received international media attention relating to the proposal to reopen the state owned gold mines that closed back in 2006. The state owned mines were no longer profitable due to the outdated technology being used and EU legislation brought in meant that mines could no longer be subsidised. Roşia Montană Gold Corporation is owned by Gabriel Resources and the Romanian government, alongside other very small investors. Media attention has been focused on Roşia Montană mainly due to the opposition NGO group ‘Save Roşia Montană’. The actress Vanessa Redgrave declared her support for the ‘Save Roşia Montană’ campaign being organised by the NGO ‘Alburnus Maior’ at a film festival in 2006 (BBC, 2006). Gabriel Resources countered this by taking out a large advert in the Guardian newspaper arguing that the modern mine they were proposing “would replace 2,000 years of poor mining practices, reduce local environmental damage and boost the economy” (BBC, 2006). What is evident on visiting Roşia Montană, is how dilapidated a lot of the buildings are in Roşia Montană village itself. Relating to the quality of the

housing based on appearances, the housing in Roşia Montană is of poorer quality than what was seen in Karabash, Russia. Roşia Montană is a rural village and local people made many comments during the interviews about the hardship of living there, including having to go use the toilet outside in -20 degrees Celsius and having to have a constant supply of firewood in winter. The unemployment rate is high in the region and has been exacerbated by the closure of the state owned mines back in 2006. This has lead to a decrease in the population as people have tried to seek employment elsewhere. The fate of Roşia Montană remains undecided, with Roşia Montană Gold Corporation still in the process of applying for the environmental permits necessary to start mining.

The demo site of Kristineberg in Vasterbotten county, Sweden, is a small village of around 300 people close to Malå (a town of approximately 3000 people). Kristineberg exists because of the mining and related industries in the area. The population of Kristineberg has declined in recent years due to the closure of a Boliden owned minerals processing plant nearby, although Boliden estimate that they have at least 10 or more year's supply of metals left to mine in Kristineberg (based on current estimates), thus ensuring the current lifespan of the mine for at least this time period. The main issue at Kristineberg is the impact depopulation has had on the village community. Facilities within Kristineberg, such as the local shop, have now closed leaving what is an ageing population where people are openly concerned about the future of their community. More and more people are choosing to live away from Kristineberg, such as in Malå, with people who leave even taking their house with them due to the low resale value achievable. The social issues that have occurred in Kristineberg are a direct consequence of the decline in the numbers of people employed in mining and related industries.

Cornwall in the southwest of the UK, is being used as an additional demo site for the purpose of WP3 work only. This makes an interesting comparison site to the other locations, in particular to Roşia Montană, due to the extensive history of mining in the region going back thousands of years. Tin and copper are the fundamental products that have been mined in Cornwall, with estimates made that in the early Nineteenth Century Cornwall was producing two-thirds of the worlds copper (Cornwall Council, 2010). Tin and copper mining declined from the mid-nineteenth century onwards, with the last metal mine, South Crofty, closing in 1998. The social repercussions that the decline in metal mining had were felt through job losses, alongside a large cultural loss and sense that the tradition of hard rock metal mining in the region had ended. Today, Cornwall still has over 1000 people employed by Imerys in the extraction of china clay and Western United Mines currently employ around 60 people and are proposing to reopen South Crofty to mine a range of metals including copper, zinc and tin.

Summary of the socioeconomic impacts of mining and CSR

Mining has impacts on the environment and the society within which it is carried out. The extent and nature of these impacts will depend on how mining companies operate and what the environment was like beforehand from a physical and social perspective. This report aims to discuss in further detail how mines can impact communities, relating to the socio-economic impacts of mining and also how the environment is ultimately

interrelated to these impacts. The responsibility of companies to plan for and mitigate against potential negative impacts of mining (Corporate Social Responsibility) is also discussed. It is generally considered that there has been a change over time in how mining companies operate, moving from attitudes where any environmental impact is regarded as a cost of the economic benefit of the products generated, to the view that mining has to be more socially and environmentally acceptable (e.g. Cragg and Greenbaum, 2002; Jenkins, 2004; Warhurst and Mitchell, 2000). The term 'responsible mining' is now frequently used as the general aim of how mining companies want to be seen. How they go about trying to be 'responsible' is discussed in the report below, with examples of good and bad practice taken from across the world.

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Chapter 1 Introduction

1.1 Aims of the project

ImpactMin Work Package 3 aims to create a better understanding of the socio-economic impacts of mining, including investigating how we can develop CSR policy that will incorporate and disseminate best practice within the industry. Work package 3 will assess what different stakeholder groups think and understand about mining and how mining has affected their lives. Stakeholder relationships across the different demo sites will also be investigated. The research will be carried out using surveys, in addition to interviews and focus groups. A survey administered across all of the sites will help assess people's views and perception of mining in their region and what they are concerned about at each of the sites. Interviews and focus groups of stakeholders, including where possible the mining companies, will explore in more depth how people feel mining has impacted on their lives, providing an insight into how different stakeholder groups interact and work together.

The purpose of this work is the premise that in the future there will be a need to look to mine more within Europe as a way of ensuring security of supply of mineral resources. Thus, by finding out what people think of mining and how it has affected their lives, we have a way of relaying this information to mining companies and governments and allowing them to successfully implement policies that can mitigate negative impacts and maximise the positive benefits that mining can have. By having an awareness of and knowledge of how mining affects people and communities, mining companies can look at how what are the key factors in developing successful working relationships with different stakeholders. Mining companies have increasing numbers of social and environmental management 'voluntary' codes that they can follow, in addition to legislation, and being able to adhere to voluntary CSR guidelines will help a company maintain their 'social license' to operate in the eyes of the stakeholder groups they work alongside. Maintaining public image and the 'social license to operate' has become essential within the mining, due to the wide publicity that any negative mining incidents receive in the local, national and international media. For example, whilst you hear little about the day to day operations of mines and the positive impact mining can have to the communities in which they operate, any negative incident will be widely reported throughout the media. If people only hear bad things reported about an industry, their perception of this industry is likely to be very negative. This highlights the need for mining companies to ensure they operate responsibly from a socio-economic and environmental perspective.

Demo sites from Bosnia Herzegovina (Vihovići), Romania (Roşia Montană), Russia (Gay, Karabash, Mednogorsk), Sweden (Kristineberg) and the UK (Cornwall) were selected to provide a variation in stages of mining, from exploration phases through to post-mining projects

This report will focus on providing background information relating to all of the demo sites, based on demographic data and information about the past, current and future

use/uses of the demo sites. Socio-economic issues will be discussed within the context of each of the sites and whether these issues are directly or indirectly related to the different stage of mining at each of the sites. The research methods used will be discussed for each demo site within this report, with details provided on who was interviewed/participated in focus groups. The results from the survey and interviews will be reported in the second deliverable for work package 3.

1.2 What is responsible mining?

Responsible mining will have a diverse range of meanings to different stakeholder groups, and even down to the interpretation of individuals. Defining who stakeholders are in any mining project is a contentious issue in its own rights. Cragg and Greenbaum (2002) found that managers of one mining company regarded parties that stood to be directly affected by the mining project as 'legitimate' stakeholders, with an overall consensus view from this particular company that their responsibilities to stakeholders was a negative obligation. The interviews for the study by Cragg and Greenbaum (2002) were carried out in 1995-1996 and it is probable that views and perceptions from all sides of the mining industry have since moved on. Warhurst (2001), for example, spoke about a paradigm shift from companies taking an approach of 'doing no harm', to wanting to 'demonstrate positive development benefits' to stakeholders. Warhurst (2001) defines responsible business practice as taking an anticipatory and proactive approach to ensuring responsible operations, during all phases, that prevent environmental pollution, respect human rights and mitigate and plan for any negative social impacts. This definition includes adequate foresight being given to rehabilitation of the mine site and associated land use changes. It is perhaps easier, however, to look at associations developed through the media attention that negative mining projects and related incidents receive, creating clear images to most people/stakeholder groups of what 'irresponsible mining' is. Society concerns often create backlashes within the industry of concern, with undoubted pressure growing for companies to respond to the so-called 'voice of society' (Warhurst, 2001). In order to heave learnt sufficiently from previous disasters, responsible mining needs to adhere to the precautionary principle, whereh common sense decisions are taken on the understanding of hazards and their associated 'risk' potential when high standards of practice are followed. Whitmore (2006) suggests that lobbying against the polluter pays and precautionary principle is in some way an admission that the technology used in mining can sometimes still not be regarded as safe. The argument should therefore not be about whether mining can ever be regarded as 'sustainable' (as was suggested by Whitmore, 2006), but should relate to how we can make it 'more' responsible as the aim of continually striving to improve practice cannot be questioned. The fact that metals are fundamental to out current existence, and are therefore needed to sustain life as we know it, is suggested as a reason for why 'mining' if fundamentally compatible with 'sustainability' by Teckminco (2001) (as cited in Jenkins, 2004). Furthermore, the (United Nations Development Programme (UNDP) describe sustainable development as a process for realising human development 'in an inclusive, connected, equitable, prudent and secure manner' (Bansal and Howard, 1997, cited in Warhurst, 2001). This emphasises how essential CSR is to mining companies who want to be seen as being responsible.

1.3 Introduction to the potential socio-economic impacts of mining

Mining operations often provoke reactions, particularly from the community within which they operate. The reason why they create reactions relates to the potential of mining projects to adversely affect the affect the local community through numerous different ways (e.g. environmental degradation, diminishing livelihood prospects, displacement of people etc) (Kapelus, 2002). Undoubtedly, environmental and socio-economic impacts of mining are all interrelated, with impacts in one area having direct consequences and repercussions in another area. For example, a community relies on their landscape for their livelihood and heath and well being. Degradation of their environment through mining activities will therefore have direct affects on their society and economy (e.g. impacts on human health). Waste from the extractive industries is one of the largest sources of waste in the EU, with the potential to create environmental issues such as acid mine drainage and issues with tailings dam management, for example (European Commission, 2010). These issues have consequences on the society and economy and therefore are subject to management by EU legislation such as the directive on the management of mine waste (2006) and further legislation such as the policies on the Best Available Technology (BAT) for tailings waste and management (European Commission, 2010). The socio-economic affects of mining can therefore not be separated from the environmental issues that mining can generate.

Reactions to mining projects can generate social movements, instigating grassroots democracy through the empowerment of local groups and citizens either against or in support of a project (Bebbington *et al*., 2008). The ability of such movements to influence the outcome of a proposed mining project should not be underestimated. As the world becomes flatter and our society ever more globalised, the voice of opposition groups becomes more powerful in influencing decisions made by national governments. Differing views on how mines can affect the lives of the community in which they operate, can lead to situations where there are divided groups within the society; some that support the mine and some that oppose the development. Bebbington *et al*. (2008) describe the example of BHP Billiton in 2005, where the mine at Tintaya, Peru, received local and national movements against the environmental impacts of the mine whilst the employees led protest marches in support of the mine. Bebbington *et al*. (2008) use examples of two case studies of Cajamarca (Peru) where the Yanacocha mine which is jointly owned by Newmont Mining Corporation and the Peruvian Compañía de Minas Buenaventura and the example of Cotacachi in Ecuador. There are similarities between both of the projects, however, Cajamarca is now the biggest gold mine in South America and employs up to 8000 workers, whereas Cotacachi copper deposits are still not developed. Numerous factors are used to explain why two projects with similarities in environmental sensitivities delivered such varied outcomes. The two main issues, however, relate firstly to the importance of mining to the Peruvian economy (whereas Ecuador has relied more on hyrdrocarbons) and also to the significance of the State support (or lack of opposition) to the project in Peru (Bebbington *et al*., 2008). Social movements to stop the mine being developed lacked state-political patrons in Peru, whereas in Cotachachi, in Ecuador, they lacked allies and faced opposition against the

project albeit from areas that were not going to be directly affected by the proposed mine (including from the municipal government) (Bebbington *et al*., 2008).

Defining who is impacted by mining operations is a debatable issue in its own right, but one that must be considered prior to undertaking any observations on how people are affected or will be affected by a project. The MMSD (2002) summarise that the greatest challenge of embedding sustainable development in minerals companies is the challenge of making the concept equate to financial success.

How people are affected by mining projects is going to depend on the state of the environmental and socio-economic climate prior to the commencement of a mining project, in addition to how the mining project is carried out. The level of development of a country that a mining operation is in will shape how a mine affects the community, thus relating to the existing socio-economic and environmental context of a site. For example, the spread of HIV through mining projects is an issue in less developed countries, as are issues of; wage disparities, low compensation for land rights, child labour and establishment of informal or sometimes illegal dwellings (Mara and Pressend, 2001). In developed countries, other socio-economic impacts may be presented by a mine development, such as though lack of consultation with the community on the mining project, thus effectively disempowering the community of a decision and input into their future.

Indigenous communities are often amongst the most directly and frequently affected people by mining activities (Kapelus, 2002). Whitmore (2006) uses an estimate that out of all the gold produced between 1995 and 2015, that 50 % of it will come from indigenous lands. In recent years, however, it is indigenous communities that have challenged how mining companies operate on a wide range of issues, opening up businesses to scrutiny of how they handle their social responsibilities (Kapelus, 2002). Controversial issues relating to the land rights of indigenous people have been seen in uranium mines at Kakadu National Park in Northern Australia. Here the Mirrar people were allegedly subjected to intimidation and corruption to sign the rights to mine the land when the first mine opened (Jenkins, 2004). A campaign by local people to oppose the mine has seen campaign leaders arrested for ‘trespassing’ on what is still considered to be their native land (Jenkins, 2004). A further example relating to the impact of large mine projects on local communities, is when small scale alluvial gold miners were allegedly forcibly evicted to make way for a mine in the West Kutai Region and East Kalimantan, Indonesia (Kaye,2001,cited in Jenkins, 2004). Mara and Pressend (2001) use the case study of Bathlabine clay mine and brick works in South Africa, where 250 people lost there jobs when the mines closed in 1999 affecting not just the employees but the whole community. There were lots of environmental issues created by the mine, such as land degradation and erosion, implications from the dust created by mining on human health, and major issues from the unplanned closure (Mara and Pressend, 2001). One of main Problems related to the lack of implementation and adherence to government legislation.

In reality, there are different 'layers/mechanisms' of enforcing responsible/sustainable mining practices. At the national level, legislation and guidelines will be available within a country, and each country will have its own mechanisms for enforcing these guidelines/laws. Where mining is being carried out will have direct repercussions on the practices adopted by a mining company. A country that is more able to enforce tighter controls can use this as a policing mechanism to limit the negative aspects of mining and maximise the benefits. Developing countries, however, that may have policies in place but do not have the money or manpower to enforce their policies, face greater challenges in mitigating for the potential impacts of mining. There is also an element of the 'voice of public opinion' being greater in developed countries compared to developing countries, with corporations having paid more attention to the concerns of communities in developed countries than developing ones (Kapelus, 2002). Apart from legislation within a country, there are also controls from other governing bodies e.g. for countries within the European Union they have to comply with EU laws and directives, and then from voluntary codes and guidelines within the mining industry that companies may chose to follow or sign up to as a way of acknowledging their good practice. International organisations, like the World Bank, the UN and NGOs, also have responsibilities in providing guidelines and challenging company performance. In 2009, KPMG carried out a survey of mining companies and regulatory issues came out as the top challenge that companies felt they faced, followed by cost escalation, access to new properties/projects, scarcity of skilled labour and government involvement in the industry (KPMG, 2010). The issues relating to regulations and government involvement were much lower down the list when the same survey was undertaken in 2008 (KPMG, 2010). This outlines that governments and regulatory bodies, are alongside the local community, stakeholder groups that need careful consideration to their needs and in the case of governments and regulatory bodies to the legal implications of not following guidelines and the law.

Mining companies work internationally and are continually striving to open new projects. This globalisation of mining companies has lead Kapelus (2002) to suggest that it is this globalisation that is the driving force that is pushing companies to pay more attention to their CSR in developing countries as NGOs are also working in a wider, more globalised manner.

One of the major socio-economic impacts of mining comes when communities exist and develop because of the mining industry. A reliance on one industry creates job dependence, with the consequence of closure of that industry having devastating affects on the community. Back in the 1980s and 1990s, the decline of the British coal industry had massive repercussions on 'mining' communities. Even in 2001, it was estimated that 21.9 % of men in the English and Welsh coalfields were still economically inactive (regarding men of working age – from 16-64) (Beatty *et al*., 2005). The Coalfields Regeneration Trust was established in 1999 to support communities in England's former coal mining regions. Similar issues were created in Cornwall with the decline in tin mining from the mid-1800s onwards. If areas cannot regenerate to create sufficient employment opportunities, depopulation of an area will occur as people seek employment elsewhere. This occurred in Cornwall where after the collapse of the price

of copper in the 1860s and the decline in tin production, skilled miners started to leave and seek out opportunities around the globe (Buckley, 2005). In reality, job dependency is ultimately community reliance; hence the catastrophic implications that mine closure can have on a community. This issue is compounded when an area is mono-industrial, as following closure of a mine you are left with a workforce that have skills as miners that are not readily transferable ,without forward planning, to other types of employment. As recounted by Buckley (2005), when the final tin/copper mine closed in Cornwall in 1998 this saw the end of the era of 4000 years of metal mining in Cornwall, where miners and there families marched through Camborne and Redruth to South Crofty mine, symbolic of the culture and significance of mining in an area that where mining had been considered the 'lifeblood' for many years. Areas with a long standing tradition of mining, and communities that develop because of mining, have connections within their culture and society that become far more than just a reliance on jobs. This is evident in many 'mining' communities around the world.

Evidently, the potential socioeconomic impacts of mining can be vast, with different stages of mining being associated with various issues as discussed above, including: job and community dependency leading to depopulation and high unemployment rates. The MMSD project identified 9 key challenges faced by the minerals sector relating to stakeholder concerns:

- Viability of the minerals industry.
- The control, use and management of land.
- Minerals and economic development.
- Local communities and mines.
- Mining, minerals and the environment.
- An integrated approach to using minerals.
- Access to information (public engagement/participation key to building trust).
- Artisnal and small scale mining.
- Sector governance: roles, responsibilities and instruments (MMSD, 2002).

Environmental and socio-economic impact assessments (EIA/ESIAs) are used as a means of establishing a baseline study for a community from which the impact of a proposed mine can be established and ways of minimising the potential negative social and environmental aspects of a project can be implemented. The aim is to improve environmental management throughout the entire lifespan of a mine, in addition to helping mitigate negative social impacts whilst ensuring a community can benefit from positive aspects of a project. This ensures that a holistic approach is taken to management of all aspects of mining, including the development of a mine closure plan before mining actually begins. In the UK, for example, legislation and regulations are in place to ensure that the extraction of mineral resources is controlled by mineral planning authorities (MPA). MPAs are involved in helping create the national policies as well as ensuring that all aspects of mineral extraction follow the correct UK (and EU) legislation in place e.g. the Town and Country Planning Regulations 1999 (Environmental Impact Assessment) (England and Wales). MPAs are also challenged with protecting mineral resources from further land uses, thus enabling the resource to be 'safeguarded' for possible future use.

Epps (1997) cited in Hilson and Murck (2000) make strategy recommendations for managing key socio-economic issues within the mining industry including:

- Gather perceptions from the local community on a mine development
- Determine how any mine development will effect community life
- Identify the possible effects of a project on the religion of community traditions
- Assess how a community will participate/engage with the mining company
- Look at issues of relocating people (if this is required)
- Review whether the project may create conflict within a community
- Calculate the economic costs of protecting the cultural values of a local community
- Identify the potential benefits of the project and the negative impacts to the community

It is highly likely that to some degree any mine development will create conflict within a community, as not everyone is going to agree whether a development should proceed or on what the impacts will be and who they will affect. It is difficult as well to put a price on the potential deleterious effects that a mine development can have on the local culture and traditions. Rocha and Bristow (1997) (cited in Hilson and Murck, 2000) suggest that mine companies take the following measures implement re-skilling and training programs, micro-credit initiative to establish businesses alongside the mine development, and financial assistance to community members in the form of academic scholarships and bursaries to enhance skill levels further.

1.3 Introduction to Corporate Social Responsibility in the Mining Industry

Corporate Social Responsibility and issues of sustainability are frequently cited as having increased importance within the mining industry (e.g. Brereton and Forbes, 2004; Kapelus, 2002; Yakovleva, 2005). How businesses perform, relating to environmental, social and economic aspects, is key to shaping their public image. Mining companies have come under increasing public scrutiny as people's expectations of the industry have increased over time. Warhurst (2001) lists the following factors as contributing to driving social change and CSR: globalisation: the voice of society; voluntary codes; action groups; regulation; financial conditions; pressures from supply-chains; industry peer pressure; internal pressure and environmental change. Relating to the 'voice of society', CSR strategies have in part been a response by mining companies to manage the negative publicity they have received (Kapelus, 2002). In an interview, the manager of corporate affairs of the Billiton Mining Group commented that "undertaking CSR programmes will be the same as having to print annual corporate reports. It is what business is about" (Gonsalves, 1999, cited in Kapelus, 2002). The importance of CSR and developing strong and lasting community relations is now seen as vital in a mine maintaining its 'social license to operate', in addition to maintaining their regulatory license to mine (e.g. Brereton and Forbes, 2004; Warhurst, 2001). Despite this, the tension is always going to exist amongst stakeholders in many instances, with relationships being complex and the obligation of businesses to maximise profits for their shareholders sometimes conflicting with their commitment to different stakeholder groups e.g. the local community (Kapelus, 2002). Cragg and

Greenbaum (2002) summarise that disagreements amongst the definition of stakeholders, and their rights, arise in many different ways, reflecting issues about the apportionment of cost and benefits to stakeholders. Furthermore, in the same study, managers from one mining company clearly resented costs incurred that related to environmental review procedures, but not the costs of ensuring compliance with environmental standards (Cragg and Greenbaum, 2002). A company needs to adopt a policy that maintains their obligations to shareholders to maximise profits whilst balancing this with the needs and a real commitment to other stakeholder groups.

Business interactions help maintain our global economies, but in doing so, they have inevitable consequences on the physical environment in which we live and on people's lives, society and cultures and traditions within a society. As businesses expand, they have an even wider impact on a larger number of people. The concept of CSR is to ensure that businesses share their profits not only with shareholders, but also with the local community in which they are based. CSR therefore relates to the obligation of a business to contribute to social progress beyond economic transactions of the firm (Yakovleva, 2005). It has been suggested that the motivation of a company to engage in CSR programs is linked to one of two factors: their strong moral commitment or because they have a pragmatic need to do so (functional ways of fulfilling their obligation to stakeholder groups or minimising costs) (Kapelus, 2002). Potentially, there is a continuum of motivation where companies sit on a scale somewhere between these different forms of motivation, although their incentive to act is going to affect how they engage with CSR and the success of the relations they create with different stakeholder groups. Kapelus (2002) emphasises discusses the challenges of businesses engaging in CSR of translating their global commitment to being a responsible business to the unique context of individual communities. Every mining community and project is therefore going to be different and will need a unique set of considerations to enable CSR programs to be effective and meet the needs to relevant stakeholder groups. Without successful community engagement and consultation, a mining company is going to be simply following there own agenda relating to CSR rather than tailoring the agenda to the specific needs and priorities of a community. There are added difficulties with mining companies who employ contractors and then have to train them to follow the standards of CSR that they wish to follow and aspire to.

Former BP chief executive, Tony Hayward, has recently admitted that after the oil spill disaster in the Gulf of Mexico, that they looked "fumbling" and "incompetent" in the eyes of the public, due to their lack of preparedness for a spill on this scale (Macalister, 2010). Hayward claimed that the incident related to "corporate complacency", even when repeated denials had come from across the industry when questions regarding the likelihood of such an event had been previously raised by environmental critics. Tony Hayward addressed students at a talk at Cambridge University saying

"For me perhaps the most shattering reflection was just how much havoc can be wreaked by a single accident in one small part of a giant company's operations An accident moreover that all our corporate deliberations had told us simply could not happen".

For BP this was the ultimate low-probability, high-impact event – a black swan to borrow a term used in the financial crisis" (Macalister, 2010). This incident relates back to the basic ideas of the precautionary principle that were evidently not followed in this instance, at the detriment of a substantial amount of BPs estimated value, thus having costly and longer term repercussions.

Perhaps one of the most recent examples, of the spill of toxic red sludge on 04/10/10 from the alumina plant in Hungary, reflects how important public image is. The chief executive of the alumina plant owned by MAL Hungarian Aluminium, Zoltan Bakonyi, has since been arrested (BBC, 2010a). Incidents like these, particularly when they involve fatalities or widespread environmental damage, taint the image of entire mining and minerals processing industries. The impact of incidents like these does have knock-down effects throughout the extractive industry, having the potential to impact on future permits of mines throughout Europe. Despite such events, however, it is possible to change the mindset of people in communities that have been affected and have legacies of such events. For example, following the cyanide spill at Baia Mare in Romania in 2000, it is evident that people's views can be altered when they are sufficiently informed about how cyanide will be used and of what legislation is in place to prevent similar tragedies from unfolding. This is based on observations made during interviews of numerous people from Roşia Montană, when people were asked about what they thought of the potential use of cyanide in the Roşia Montană project. As summarised by Cragg and Greenbaum (2002), mining is an industry where the ethical issues facing managers and particularly salient, with mining remaining a contentious industry in the eyes of the public.

One of the main issues for companies and organisations wanting to promote responsible mining practices, is the range of CSR guidelines that can be followed on a voluntary basis (see below e.g. ICMM ten principles/sustainability framework, UN Global Compact, Framework for Responsible Mining, MMSD, IRMA Mining certified Evaluation Project). Although it is evident that some businesses may find one of these guidelines more applicable to them and more relevant to follow than others, there is a definite overlap of what different guideline are trying to achieve. This makes it difficult for businesses to work out where they stand and whom they should align to. CSR and sustainability initiatives are discussed in further detail below.

1.3.1 ICMM and sustainability reporting – global reporting initiative (GRI)

ICMM was formed in 2001 to try to drive positive changes within the mining and metals industries. ICMM has access to approximately 1500 companies within the mining sector (ICMM, 2010a) Refer to Table 1 to look at ICMM member performance.

In 2008, ICMM company members were committed to following the GRI sustainability reporting framework (ICMM, 2010b). The purpose of the GRI reporting framework is to enable an organisation to report on their economic, social and environmental performance (R & G and MMSS, 2010). The GRI reporting framework is now in its third generation (referred to as G3 and was finished in 2006) and the Mining and Minerals

Sector Supplement (MMSS) helps provide additional guidance specifically within the context of the mining and minerals sector, expanding on issues that may have not been sufficiently addressed with the GRI (ICMM, 2010b). This intention is to enable a diverse

Table 1 ICMM member performance table, 2009.

Company and Council member	1. Year report covers	2. Policy alignment with Principles	3. Assurance of policy alignment with Principles	4. G3 application level	5. Use of MMSS	6. Assurance of G3 application level
		subject matter 1			subject matter 5	
Anglo American www.angloamerican.co.uk Cynthia Carroll , CEO	2008	✓		A+	✓	✓
AngloGold Ashanti www.anglogoldashanti.com Mark Cutifani, CEO	2008	✓		A+	✓	✓
African Rainbow Minerals** www.arm.co.za Patrice Motsepe, Chairman	2008/09			C		
Barrick www.barrick.com Aaron Regent, President and CEO	2008	✓	✓	A+	✓	✓
BHP Billiton www.bhpbilliton.com Marius Kloppers, CEO	2008/09	✓	✓	A+	✓	✓
Freeport-McMoRan* www.fcx.com Richard Adkerson, President and CEO	2008	✓			✓	
Goldcorp** www.goldcorp.com Charles Jeannes, President and CEO	2008			B	✓	
Gold Fields www.goldfields.co.za Nick Holland, CEO	2008/09	✓	✓	B+		✓
Lihir Gold www.lglgold.com Phil Baker, CEO	2008	✓	✓	B+	✓	✓
Lonmin www.lonmin.com Ian Farmer, CEO	2008/09	✓	✓	B+	✓	✓
Mitsubishi Materials www.mmc.co.jp Akihiko Ide, President	2008	✓		A	✓	
Minerals and Metals Group** www.mmgroupltd.com Andrew Michelmore, CEO						
Newmont www.newmont.com Richard O'Brien, President and CEO	2008	✓	✓	A+	✓	✓
Nippon Mining & Metals www.nikko-metal.co.jp Masanori Okada, President and CEO	2008	✓	✓	A+	✓	✓
Rio Tinto www.riotinto.com Tom Albanese, CEO	2008	✓		A+	✓	✓
Sumitomo Metal Mining www.smm.co.jp Nobumasa Kemori, President	2008	✓	✓	B+	✓	✓
Teck www.teck.com Donald Lindsay, President and CEO	2008			A	✓	
Vale www.vale.com Roger Agnelli, President and CEO	2008	✓		B+	✓	✓
Xstrata www.xstrata.com Mick Davis, CEO	2008	✓	✓	A+	✓	✓

*Freeport-McMoRan has used the GRI G3 Guidelines but did not self-declare an application level

**African Rainbow Minerals, Goldcorp and Minerals and Metals Group (MMG) became ICMM members in the third quarter of 2009, so the full membership requirements do not currently apply. MMG was created in June 2009. Its first full SD report will be published in 2010

1. Year report covers: ICMM's company members' sustainable development reports cover the same reporting cycle as their annual reports. As ICMM's members have varying financial year ends, the 2008 period covered in the reports varies. Most members have a 31 December year end. Our Japanese members (Nippon Mining & Metals, Sumitomo Metal Mining and Mitsubishi Materials) all have a year end of 31 March. A minority of members have a financial year end of 30 June (African Rainbow Minerals, BHP Billiton and Gold Fields) and one has a 30 September year end (Lonmin).

2. Policy alignment with Principles: A '✓' in this column indicates that members have reported on the alignment of their policies with ICMM's SD Principles. In some cases this has included a tabular summary of ICMM's Principles mapped against a company's policies.

3. Assurance of policy alignment with Principles: A '✓' in this column indicates that members have sought independent third party assurance on the alignment of their sustainability policies to ICMM's SD Principles (subject matter 1).

4. G3 application level: This column indicates a company's self-declared application level of the GRI G3 Sustainability Reporting Guidelines (ranging from A to C). The application levels indicate whether the reporting company is a beginner (C), intermediate (B) or advanced (A) reporter.

5. Use of MMSS: A '✓' in this column indicates that members have reported using either the pilot MMSS or the draft final MMSS, produced by GRI to guide reporting in the mining and metals sector. To achieve a GRI application level of A, companies must report against the indicators in the MMSS.

6. Assurance of G3 application level: A '✓' in this column indicates that members have sought independent third party assurance on their self-declared application level of the GRI G3 Sustainability Reporting Guidelines (subject matter 5).

Note: All members have signalled that they are on track to meet the full requirements of subject matters 1 through 5 for their 2009 reports, published in 2010.

range of issues to be reported on that relate to the sustainability performance of companies of varying size (R & G and MMSS, 2010). The GRI allows organizations to create there own benchmark within the context of their social, environmental and economic performance, from which they can maintain annual comparisons. Having a standardized system is aimed at making things easier for the organization itself, whilst enabling a comparison to be made of what companies are actually doing (GRI, 2010) (refer to figure 1, the global reporting framework).

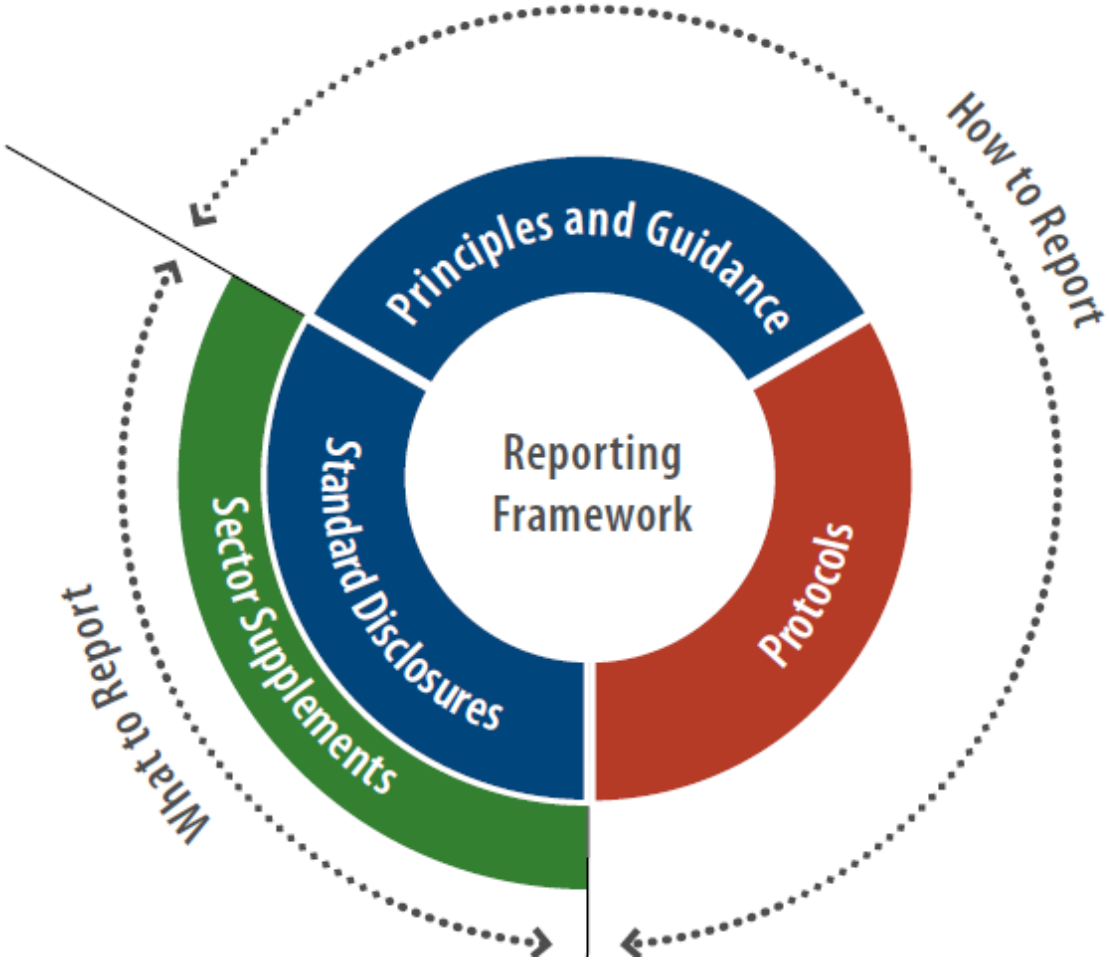

Figure 1 GRI reporting framework (R & G and MMSS, 2010).

ICMM (2010b) have there own reporting framework, detailing 10 principles that their members have to implement, relating to stakeholder engagement and communication (see below).

ICMM 10 principles (ICMM, 2010c):

01. Implement and maintain ethical business practices and sound systems of corporate governance.

02. Integrate sustainable development considerations within the corporate decision-making process.
03. Uphold fundamental human rights and respect cultures, customs and values in dealings with employees and others who are affected by our activities.
04. Implement risk management strategies based on valid data and sound science.
05. Seek continual improvement of our health and safety performance
06. Seek continual improvement of our environmental performance
07. Contribute to conservation of biodiversity and integrated approaches to land use planning
08. Facilitate and encourage responsible product design, use, re-use, recycling and disposal of our products
09. Contribute to the social, economic and institutional development of the communities in which we operate
10. Implement effective and transparent engagement, communication and independently verified reporting arrangements with our stakeholders

1.3.2 United Nations (UN) Global Compact

The UN Global Compact is an initiative launched in 2000, aimed at businesses that want to align their operations and strategies to 10 principles in the areas of labour, environment, human rights and anti-corruption. It now has over 7700 participants who support the ten principles in their businesses or organisations (UN, 2010). The ten principles include (UN, 2010):

Human Rights

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
Principle 2: Ensure they are not complicit in human rights abuses.
Labour
Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
Principle 4: The elimination of all forms of forced and compulsory labour;
Principle 5: The effective abolition of child labour; and
Principle 6: The elimination of discrimination in respect of employment and occupation.

Environment

Principle 7: Businesses should support a precautionary approach to environmental challenges;
Principle 8: Undertake initiatives to promote greater environmental responsibility; and
Principle 9: Encourage the development and diffusion of environmentally friendly technologies.

Anti-Corruption

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

To participate in the Global Compact, a company is expected to adhere to the principles within the day to day running of their operations and decision making, to adopt responsible business practices with other partners, consumers and the general public; and to provide details within its annual sustainability report on how they support the objectives outlined by the initiative (UN, 2010).

1.3.3 Mining Minerals and Sustainable Development (MMSD) and the Global Mining Initiative (GMI)

The MMSD project was an independent two year research project running from 2000-2002, investigating how the mining and minerals sector contribute to sustainable development at a global level (MMSD, 2010). It was an initiative established by the Global Mining Initiative (GMI) which led to the formation of ICMM. The project involved the collaboration of 25 experienced individuals from different backgrounds to review the challenges of how the mining and minerals sector could be guided to sustainable development initiatives (MMSD, 2002). The MMSd project has received criticism, such as from Whitmore (2006), who considers that the project lacked credibility in its approach and suggests it was heavily criticized by many NGOs and mine affected communities.

1.3.4 Framework for Responsible Mining

In 2005 the Centre for Science in Public Participation (CSP^2) launched an independently-lead Framework for Responsible Mining. The aim of this framework was to build on and combine the work that existed in other initiatives, such as through industry sponsored studies e.g. MMSD, ICMM, academic sources, mining company policy and NGO reports (Miranda *et al*., 2005). The objective of the framework is to take a holistic approach looking at the environment, human rights, social impacts and issues and combine what has been done before in different capacities and from diverse angles and backgrounds. The initiative had four target audiences; mining companies, NGOs, financial institutions (private and public banks) and government and related government bodies (Miranda *et al*., 2005).

1.3.5 The Alliance for Responsible Mining (ARM)

The ARM initiative was established in 2004 as a way of enhancing social, environmental and governance and labour practices in small scale and artisanal mining operations (ARM, 2010a). The aims of the ARM are to help small scale miners' access initiatives like Fair Trade. ARM believe it is initiatives like this that have the ability to raise standard within communities who rely on small scale mining, in addition to helping other social aspects, such as by improving working conditions for miners and minimising environmental damage (ARM, 2010b).

1.3.6 Mining Certification Evaluation Project (MCEP)

The MCEP was a three year project starting in 2002, investigating the feasibility of using independent certification of the environmental and social performance of mine sites (MCEP, 2006). The aim of the project was not to create standards in itself, but to establish a platform from which future work could be done. WWF-Australia was responsible for the overall management of the project and formed the MCEP Working

Group to direct and steer the program alongside support and participation from a range of international mining companies and NGOs (MCEP, 2006). MCEP (2006) examined three main research questions relating to the potential of such schemes to be credible and effective:

1. **Governance** What are the key governance issues for a certification scheme in the mining sector?
2. **Setting Standards** Can principles and criteria for acceptable social and environmental performance by mine sites be developed that have broad agreement from the Working Group and meet stakeholder expectations?
3. **Assessment and Assurance** Can an audit protocol be:
   - Designed and implemented to test the performance of mine sites against these criteria, in a manner that is practical and cost-effective?
   - Utilised in a variety of ecological, socio-economic and cultural settings, both within Australia and internationally?

1.3.7 The Initiative for Responsible Mining Assurance (IRMA)

Launched in 2006, IRMA works across sectors (mining companies, jewellery, NGOs and trade associations to develop a means by which they can comply with environmental, human rights and social standards for mining companies (IRMA, 2010). IRMA embraces the vision of responsible mining from a social and environmental perspective, with the idea being that some mining companies operate a lot more responsibly than others and that there is a need to recognise the difference between those who are responsible and those who are not. IRMA uses independent means of assessing the performance of mining companies relating to the environment, health, safety and culture (IRMA, 2010). IRMA (2010) aims to build on existing research, tools and initiatives such as the Framework for Responsible Mining, MMSD and the MCEP.

1.4 Stakeholder relations and community engagement within the mining industry

Assessing who stakeholders are and how they interact and relate to each other is important in gaining an overall view of the impacts of that industry has on different groups of people. CSR programs are dominated by companies showing their commitment to the local community (Kapelus, 2002). To do this, it is essential that a mining company talks to the local community to hear their voice and to enable them to present views on any CSR strategy created. There is one fundamental issue here, and that is in defining who the community is and therefore who is ultimately affected by the mining project. This relates to the fact that communities can be defined on the basis of geographic territory, religion, culture, history, kinship and thus can have multiple identities that may evolve over time (Kapelus, 2002). The ability to create good relationships with the local community is, however, essential for creating efficient mining operations that can cut down on lead time, disputes and delays within projects (Cochrane, 1999, cited in Kapelus, 2002). Furthermore, Cochrane (1999) stated the importance of ensuring that relationships between the local community and the mining company were business like rather than based on philanthropic moral obligations.

A review of 47 tri-sector partnerships within the oil, gas and mining sectors revealed that there were 5 key sets of project-level drivers:

- Stakeholder expectations and the needs of the local community.
- Corporate policy and practice.
- Innovative local technology.
- The reputation of management at a local level
- Government development plans (Warhurst, 2001).

Large mining companies will often have their own teams that help foster ways of engaging the local community and creating two-way dialogue. Alcoa for example, who have aluminium operations around the world, like to let people working at their local operations decide how community engagement should be pursued, valuing the importance of having a each site being different and requiring unique ways of engaging the local community in operations (Alcoa, 2010). Anglo American, have a "Socio-Economic Assessment Toolbox" (SEAT) that has been used across 16 different countries in over 55 mining operations (Anglo American, 2003). The purpose of this is to find out what the priority issues are for the community who will be affected by the mine, providing guidance on managing sustainable development priorities and trying to create a positive 'good neighbour' element of the mining company in the eyes of the local community (Anglo American, 2003). Anglo American (2003) lists the key steps from SEAT as being:

1. Profile the company's operations and the local 'host' community.
2. Engage with all local stakeholders.
3. Identify the community's key socio-economic priorities, and the company's impacts (positive and negative) upon these.
4. Develop a plan to reduce negative impacts and increase positive impacts.
5. Engage with the community to address some of the broader challenges they face, irrespective of the company's presence.
6. Produce a report (with local stakeholders) that summarizes achievements and lays out a framework for moving forward.
7.

ICMM (2010d) reflect that leading companies will often have internal means of assisting CSR, although it is evident that there is a lack of consistency between how companies act and even within a company and subsidiaries of a company. Kapelus (2002) suggests that Rio Tinto have some operations that serve as showpieces for responsible mining, whereas others lag much further behind with respect to there social and environmental impacts (including human rights). There is undoubtedly a push of major international mining companies to take a consistently high-end approach to all aspects of their mining operations, including socio-economic and environmental aspects. Whilst there are always going to be examples of 'good' and 'bad operators, there is always room for improvement on past and current practices to enable future progress to be made.

1.5 Environmental Management

1.5.1 Mine closure and the use of environmental bonds

For the past few decades, most mining operations have had environmental bonds and policies in place to 'cover' the cost of rehabilitation of mine sites on closure. In reality though, the adequacy of the post mining plan is often questionable. From an environmental perspective, rehabilitating mine sites must resolve issues that have been created by the mine relating to the short and longer-term problems, including dealing with issues of land restoration from a health and safety point of view and from the perspective of the visual impact of the: mine site, water quality, land contamination, impact on nature and biodiversity and the affect the mine has had on, creating dust, for example. Whitbread-Abrutat (2010) brings attention to the issue that quite often; rehabilitation carried out in previous decades is no longer comparable with today's environmental standards and therefore requires further regeneration of sites, giving the example of the Appalachian coal mining landscapes in the USA. The aforesaid list of environmental considerations is before the mine closure has dealt with any socio-economic impacts on the local community and other stakeholder groups who are intrinsically linked to the mining industry.

The Summitville gold mine in Colarado was abandoned in 1992, having in excess of $150 million spent on remediation from that date up to 2000 by the US Environmental protection Agency (USEPA) (Warhurst and Mitchell, 2000). The environmental bond set aside for the clean up was obviously insufficient at the start of the project and was not added to as was necessary throughout the duration of the project, an overall failure of the project through regulatory issues and poor company policy (Warhurst and Mitchell, 2000).

The closure during the 1980s/90s of coalfields in Britain saw the number of coal miners fall from 170,000 in the mid 1980's to 4000 in 2005, with such an unplanned and sudden loss of jobs having long lasting impacts on mining communities (Beatty *et al*., 2005). Beatty *et al*. (2005) suggest, that in 2005, around 60 % of the jobs lost in the coal industry had been replaced by new jobs for men in the same areas, providing evidence that the areas most severely affected are now regenerating. The issue here though is the need for regeneration initiatives to be put in place to enable communities to diversify to other industries and sources of employment before a mine closes. This is of particular importance when communities grew and come in to existence because of the mines and therefore rely heavily on mining and spin-off businesses for sources of employment. Successful mine closures can, however, be achieved through optimal management of the resource and by aligning the closure process to the needs and requirements of all stakeholder groups (Fourie and Brent, 2006). Fourie and Brent (2006) conclude through assessing the causes of unsuccessful mine closures, that the reasons for failures and the inevitable cost of unsuccessful closures to national governments to resolve environmental and social issues are easily avoidable with long-term planning strategies.

Environmental bonds are used to provide a means of (in theory) repairing and remediating any environmental damage caused by a mine closing suddenly, often due

to financial issues. Ensuring an environmental bond is of an adequate size is essential to cover the cost of covering any damage created at any stage of unexpected closure. This then saves the tax payer the expense of covering any rehabilitation of the mine site to make the land reusable again. ICMM (2008) developed a toolkit for taking a holistic approach to planning for mine closure during the early stages of establishing a mine, through looking at socio-economic and environmental parameters. The purpose of the toolkit is to try to get mining companies to develop plans that maximise the social benefits that mining can have on a community whilst addressing and consequently mitigating for any of the negative consequences that it may have relating to environmental and social factors (ICMM, 2008). ICMM (2008) suggest that mine closure plans need updating annually to account for any changing circumstances, emphasising the need to develop a closure plan that makes an accurate assessment of the cost of a successful closure. It is suggested that closure costs be estimated using a probabilistic approach where they acknowledge the potential variance of closure costs e.g. there is a 50 % chance the closure will cost X amount and a 15 % chance that the closure cost will exceed Y amount (ICMM, 2008).

1.5.2 International Cyanide Management Code (cyanide code)

The cyanide code relates to the manufacture, transport and use of cyanide in the production of gold and is a voluntary industry-led initiative that aims to promote:

- Responsible management and use of cyanide in gold mining.
- High standards of health and safety and human protection.
- Minimised environmental impacts from the use of cyanide (ICMI, 2010).

Companies can sign to the code by firstly demonstrating their compliance with the code, and secondly by enabling independent auditors to verify their compliance and make the information available publically so it can be viewed by interested stakeholders (ICMI, 2010).

1.5.3 ISO 14001

The International Standards Organisation (ISO) is the largest organisation who develops international standards on a global scale. The work is coordinated in Geneva, Switzerland.

ISO 14001 was first published in 1996 and is an environmental management system that enables an organisation to:

- Implement, maintain and improve an environmental management system
- Assure itself of its conformance with its own stated environmental policy (those policy commitments must have been made)
- Demonstrate conformance
- Ensure compliance with environmental laws and regulations
- Seek certification of its environmental management system by an external third party organization (ISO, 2010a).

The ISO 14000 series also includes codes ISO 14067 and ISO 14069) that relate to carbon footprint quantification and greenhouse gas reduction strategies. Globally, many

mining companies (and almost certainly all the international companies) will seek accreditation with the ISO 14000 environmental management system. Gaining compliance with ISO 14001 is, as noted by ISO: “Compliance and embracing ISO 14000 can be a daunting task”, but they have constructed a toolkit to help try and guide organisations through the process (ISO, 2010b).

1.5.4 Occupational Health and Safety - ISO 18001

Occupational Health and Safety Standards (OHSA) (through ISO 18001) aims to clarify health and safety specifications in workplaces, with the aim of being compatible with other ISO standards (OHSA, 2010). OHSA (2010) have a toolkit that organisations can work through to help them comply with ISO 18001 guidelines. ICMM also have developed there own good practice guide on occupational health risk assessment (ICMM, 2010e).

1.5.5 Social Responsibility ISO 26000

In 2010, ISO have brought in a new standard relating to social responsibility and sustainable development, encouraging organisations to go beyond legal compliance (ISO, 2010c). ISO 26000 aims to identify:

- Concepts, terms and definitions related to social responsibility.
- The background, trends and characteristics of social responsibility.
- Principles and practices relating to social responsibility.
- The core subjects and issues of social responsibility.
- Integrating, implementing and promoting socially responsible behaviour throughout the organization and, through its policies and practices, within its sphere of influence.
- Identifying and engaging with stakeholders; and
- Communicating commitments, performance and other information related to social responsibility (ISO, 2010c).

Chapter 2 Introduction to the project demo-sites

2.1 Socio-economic background of ImpactMin demo-sites

2.1.1 Bosnia Herzegovina, Vihovići

Vihovići is located in the north of Mostar within the city boundary (refer to the maps showing its location in figures 2 and 3). Herzegovina is the southern region of Bosnia Herzegovina, with a climate skin to the Mediterranean region. The northern part of Bosnia Herzegovina (Bosnia) is mountainous and has a cooler climate.

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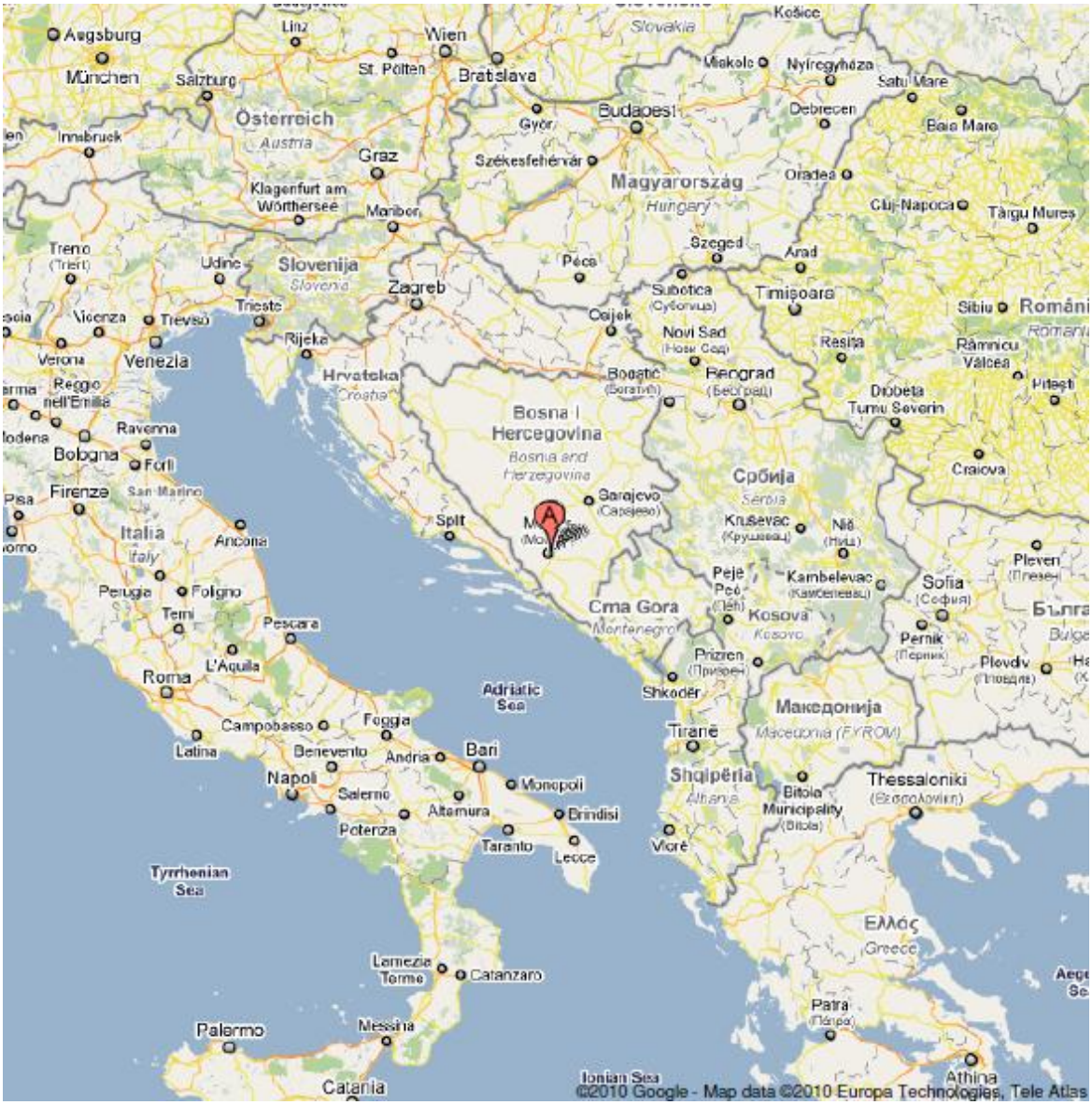

Figure 2 Google map of Mostar, Bosnia Herzegovina, where Vihovići is located.

Figure 3 Image of Vihovići mine site, Mostar (2004).

Mining started at the Vihovići site back in 1881, first with underground mines and from 1963 with open-cast pits, with 11 million tons of high quality brown coal produced between 1919 and 1992 (KfW, 2007). Vihovići provides a complex and interesting site for the ImpactMin project to use as a case study, where mining stopped back in 1991 due to the start of the war and widespread conflict in the region. The cause of the mining stopping adds a different dimension to the use of Vihovići as a demo site, due to the vast implications that political instability had on the site and throughout the entire region. During the war, mining ceased and the coal pit became the dumping ground for municipal waste, with normal services became severely disrupted and most municipal services stopping. Despite the fact that it has been 15 years since the end of the war, the mine at Vihovići has not reopened. The waste has been cleaned from the area in a programme of intensive remediation of the site. The former coal mining company has not paid for any of the remediation work to be carried out despite their legal obligations to do so (KfW, 2007).The site is now relatively clean but the land remains effectively unused. The main issue relating to developing and using the site for any form of activity is the instability of the slopes of the pit. During the war, houses were constructed (most likely to be of illegal construction) right along one side of the pit (refer to figure 4).

One of the major remediation challenges that have been undertaken by Fichtner, has been the extinguishing of sporadic underground fires coming from the remaining underground coal reserves. This has produced smoke over the site that would then spread over the whole of Mostar due to the close proximity of the site to the city

(Vihovići is within the boundary of Mostar which lies in a valley).There is no certainty about what will happen to the site at Vihovići site. This was one of the questions we wanted to ask people; did they think mining was over at Vihovići and if so, how did they want the land to be reused?

Figure 4 Vihovići mine site post rehabilitation. Mostar city is in the background. Note the houses that back straight on to the pit.

Mostar is still suffering from the affects of the war, with many buildings still dilapidated and covered in marks from the craters and gun fire. Some of the buildings have no roof on and trees growing inside them (refer to appendix 1, for further pictures of the site and the bauxite mines that are still in use in Čitluk). Mining in the region is now carried out on a very small scale, with bauxite mines still operating in Čitluk. Mining is not a significant contributor to the local economy in Mostar.

Table 2 provides details on the site at Vihovići and in Mostar as a whole. Mostar is a city with a population of just over 100,000. In 1991 when the last official census in Bosnia Herzegovina was carried out, the population of Mostar was 126,628 and there have been large fluctuations in populations and changes in the ethnic composition of Mostar since the war (Anon, 2002). The Neretva river divides the city physically and is now regarded as a divide of people from different ethnic backgrounds. Bosnia Herzegovina is an ethnically diverse country with 48 % of people being Bosniak, 37.1 % Serbian,14.3

% Croatian and 0.6 % classified as being of other ethnic backgrounds (Index Mundi, 2009a). Between 1991 (before the war) and 2002, the mean income decreased from 1000 KM to 636 KM (Anon, 2002). Based on the figure from 2002 it is evident that the socio-economic situation in Mostar has been made more difficult in the post-war period than before the war. Unemployment rates are still very high in Mostar (37.24 %) and Bosnia Herzegovina (40 %) as a whole (see table 2). The mean wage in Mostar is below the mean wage for the entire country (see table 2). The difference in cost of living and income (to meet a minimum cost of living it is thought that the mean level of income creates a deficit) is thought to be met by the 'grey economy' or by money being sent back from family members living abroad (Anon, 2002). In 2002, 75 % of the population of Mostar was estimated to be dependent on 25 % the population (employed family members), compared to a figure of 35 % in 1991 (Anon, 2002). Refer to appendix 1 for further pictures of the demo site.

Table 2 Demographic data for Mostar, Bosnia Herzegovina.

Mostar - Vihovići, Bosnia Herzegovina			
	Data	Source of data	Year data
Status of mine	Closed in 1991, remediated		
Population of Mostar	103,751 (estimate)	Anon (*)	2002
Population of Bosnia Herzegovina	4,613,414	Index Mundi (*1)	2009
Employment at Vihovići	Not applicable - the mine is closed.		
Unemployment rate in Mostar	37.24%	Index Mundi (*1)	2009
National unemployment rate	40%	Index Mundi (*2)	2009
Mean wage in Mostar (£1 = ~2.5 KM)	7632 KM	Anon (*)	2002
Mean wage nationally	12,084 KM	Bosnia News (*3)	2008
Mostar ageing population (% people over the age 65)	Not known	Not known	
National ageing population (% people over the age 65)	14.80%	Index Mundi (*1)	2009
Mean life expectancy in Mostar men (years)	Not known	Not known	
Mean life expectancy in Mostar women (years)	Not known	Not known	
National life expectancy Men (years)	74.92	Index Mundi (*1)	2009
National life expectancy Women (years)	82.34	Index Mundi (*1)	2009
National educational attainment (years of schooling)	13 years	Index Mundi (*1)	2009

Data sources:
* Anon, 2002. Mostar Wastewater Study: Demographic and Socio-economic Study Appendix A.
*1 http://www.indexmundi.com/bosnia_and_herzegovina/demographics_profile.html
*2 http://www.indexmundi.com/bosnia_and_herzegovina/unemployment_rate.html
*3 http://www.indexmundi.com/bosnia_and_herzegovina/unemployment_rate.html

2.1.2 Romania, Roşiă Montana

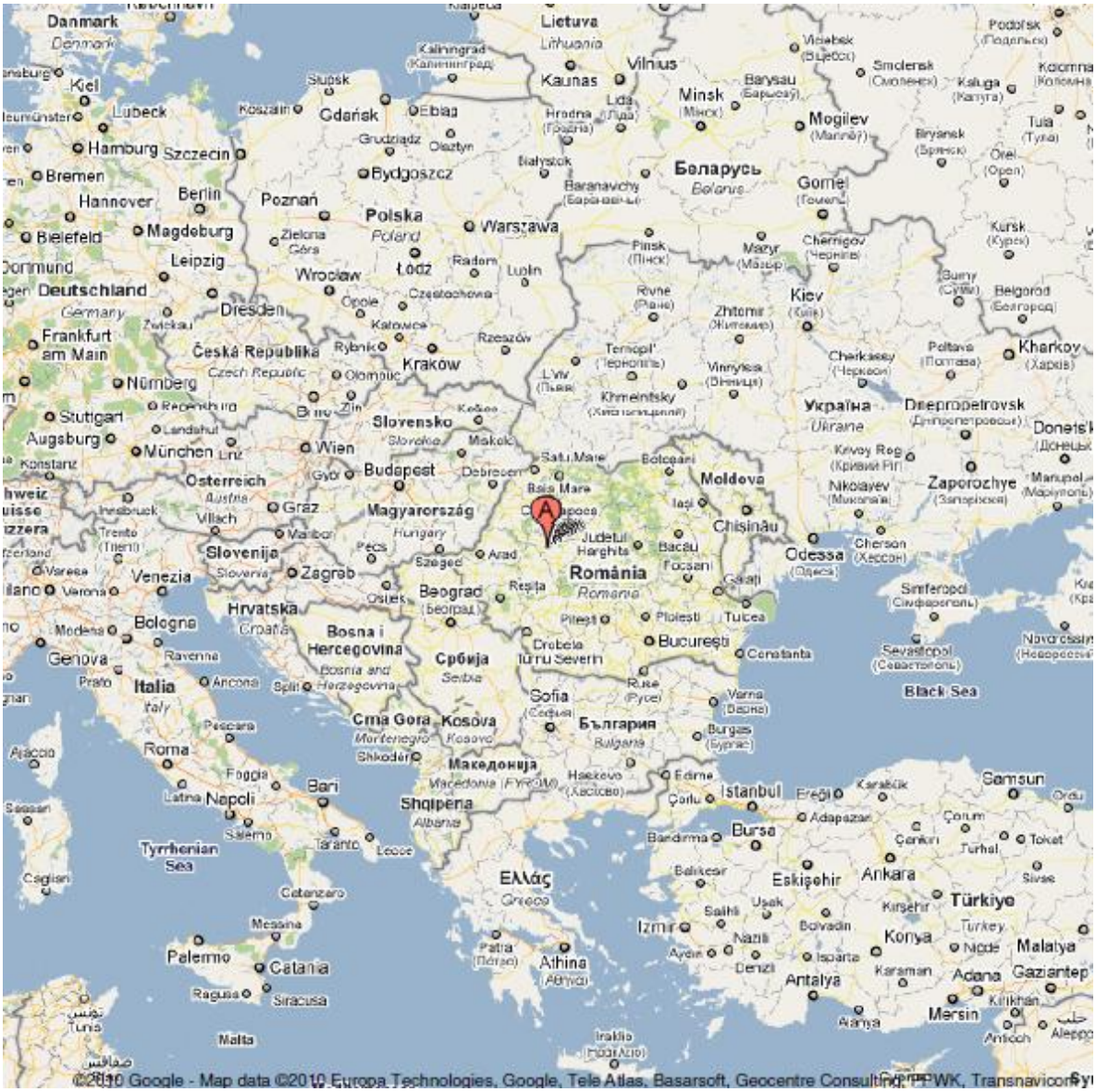

Figure 5 Google map of Roşia Montană, Romania.

Roşiă Montana commune is located in Alba County, in the Apuseni mountains in Transylvania (refer to figure 5). Roşiă Montana commune has a population of approximately 4000 people and the commune consists of 16 villages over 4347 ha and has a small percentage of Roma people (Anon, 2008). Alba Iulia is the capital of Alba County (refer to table 3 for demographic information). The Romanian census (2002) indicated the ethnic background in Romania as being; Romanian 89.5%, Hungarian 6.6%, Roma 2.5%, Ukrainian 0.3%, German 0.3%, Russian 0.2%, Turkish 0.2%, and other 0.4% (Index Mundi, 2010b).

Mining has gone on in this region for thousands of years, with sections of the gold mines dating back the Roman times (Anon, 2008). Roşiă Montana state owned gold

and silver mines closed in 2006. Since 1997, Roşiă Montana Gold Corporation (RMGC) (80 % owned by Gabriel Resources Ltd and 19.31 % by the state (Fomer Minivest company – renamed Copper Public Corporation of Deva) (Anon, 2008), have been attempting to submit plans to reopen the mine, with the initial thoughts back in 1997 being that there would be a continuation in mining from the state owned operations to the privately run mines. In 2007, RMGC employed a total of 473 people, with 89.7 % of those people employed coming from Alba County (Anon, 2008). It is currently the biggest employer in the area, offering a range of skilled and unskilled jobs. Due to the complexity of obtaining the environmental permits required to reopen the mine, the mines have been closed now for 4 years leaving large numbers of people within the rural village commune unemployed. Between 1997 and 2007, the closure of the state owned mines saw massive dismissals of over 2798 employees (Anon, 2008). Roşiă Montana is a rural area that has relied heavily on the gold mines as the major source of employment in the commune (Anon, 2008). Current opportunities in other types of employment are restricted by the lack of infrastructure in the area, with limited agriculture due to the mountainous terrain, limited tourism due to the lack of transport infrastructure and lack of amenities like hotels and restaurants, leaving forestry being one of the main existing industries left in the commune of Roşiă Montana.

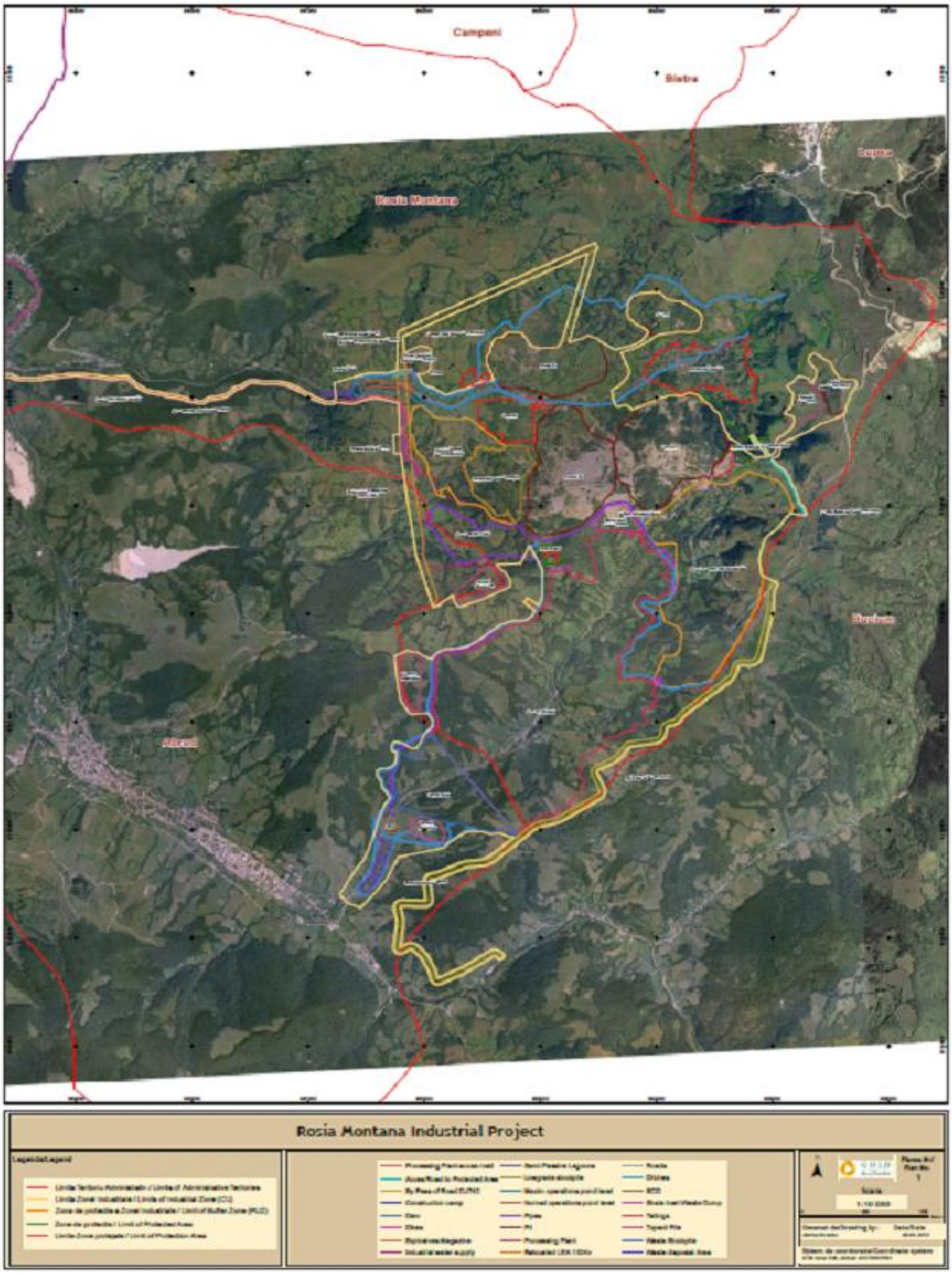

Figure 6 Roşia Montană project industrial boundary.

RMGC have undertaken an extensive consultation with local people including over 1200 individual meetings and interviews, over 500 questionnaires, 18 focus groups and 65 public debates regarding reopening the mines (Szentesy - personal communication, 2010). The plan is to create four open pits: Cetate, Cârnic, Orlea and Jig (refer to figures 6 and 7 to see the boundary of the project and a picture of one the abandoned open pits) from the existing mines, with the exploitable reserve estimated at 215 Mt ore with a content of 1.46 g/t of gold and 6.9 g/t of silver (Anon, 2008). The pits themselves will directly cover 205 ha, but the project boundary (where houses are being purchased in) covers 1258 ha (Anon, 2008). The direct benefits to the Romanian government in the form of taxes and dividends are estimated at $985 million US, with the estimated profit to the company being $1.4 billion US (Anon, 2008). To carry out the work, purchases of residential and non-residential properties have been undertaken by RMGC, although this has ceased at the present time pending approval of the environmental permit. Up until 2006, 594 residential properties have been purchased and 1028 non-residential properties (Anon, 2008). The properties purchased are within the defined environmental boundary of the proposed operations (see figure 6), leaving people only a short distance outside of the boundary able to carry on living there. It is evident from talking to local people in Roşiă Montana that this has created friction and jealousy within the community, in part due to the 'elevated' price people have received for the purchase of their house (the price reflects an average price in the area based on a radius of approximately 250km thus reflecting a much higher price than the actual value of houses in this rural area. The impact of such a large number of properties being purchased is one of the major social impacts of the proposed project. People have had the option to relocate to Alba Iulia, the new Roşia Montană (Piatra Albă) (where the site was chosen by local people) or for people to use the money to relocate themselves.

RMGC estimates that 1200 jobs will be created during the construction phase of the mine and 640 during the exploitation phase (the project has been viewed in terms of four phases; pre-construction, construction, exploitation and project closure). In 1992, the national Institute for Statistics classified 36.6 % of people in Roşia Montană as working in the mining industry and a further 26.2 % as working in ore processing (Popoiu *et al*., 2004). It is likely that in reality many of the other people classified as working in other industries were also reliant indirectly on mining.

To date, studies have shown that given the current rate of depopulation of the area, that by 2035, the population could decrease by 41.7 % (Anon, 2008). Perhaps the most pertinent current issue facing Roşia Montană relates to the high numbers of unemployed [people (refer to table 3). Further impacts of the project are that RMGC propose to clean up the environmental damage created by the former state owned mines, in addition to creating employment opportunities, infrastructure that is much needed in the area and taxes on wages, value added tax, mineral resource taxes and customs duty (Anon, 2008). It is forecast that the project would create 6000 indirect jobs as a multiplier effect in terms of generating spin off businesses (Roşia Montană, 2007) and this would be of economic benefit to Roşia Montană and the surrounding area. There are, however, other negative consequences on the area, such as the impact of the project and change in community structure on the traditions and culture in the area.

It is evident from initial observations that the project proposal has to some extent divided the community with respect to who is for and against the project and also relating to the issues acquiring the land required to commence the project. RMGC have stated they would work in accordance with the guidance from the new ISO 2010 social responsibility initiative.

Observations made during the site visit to Roşia Montană indicate that RMGC are actively involved within community life and liaise with the local people on a more of less weekly (or even daily) basis about one issue or another. RMGC have many ways in which they support the local community at many different levels, examples include the Roşia Montană Micro-credit initiative, part of a community development plan of RMGC, which offers loans to local people who may want to open a business or expand an existing business (Anon, 2008).

Refer to appendix 2 for further pictures of the demo site.

Figure 7 Former state owned mine sites above Roşia Montană village.

Table 3 Demographic data for Roşia Montană, Alba County, Transylvania, Romania.

Roşia Montană, Alba County, Transylvania, Romania			
	Data	Source of data	Year data
Status of mine	Closed state owned Au/Ag mines - trying to reopen		
Population of Roşia Montană Commune	3865	Anon (*)	2008
Population of Alba County	382,747	Romania Government (*1)	2002
Population of Romania	22,215,421	Index Mundi (*2)	2009
Employment at Roşia Montană Gold Corporation	473	Anon (*)	2007
Unemployment rate in Roşia Montană	17.88%	Anon (*)	2007
National unemployment rate	6.30%	I.N.S. (*3)	2009
Mean annual wage in Alba County (gross)	19,932 lei	Anon (*)	2008
Mean annual wage nationally (gross)	21,540 lei	Bank News (*4)	2010
Alba County ageing population (% people over the age 60)	19.48%	Anon (*)	2003
National ageing population (% people over the age 65)	14.70%	Index Mundi (*2)	2009
Mean life expectancy in Alba County Men (years)	74.78	Anon (*)	2000-2002
Mean life expectancy in Alba County Women (years)	68.05	Anon (*)	2000-2002
National life expectancy Men (years)	68.95	Index Mundi (*1)	2009
National life expectancy Men (years)	76.16	Index Mundi (*1)	2009
Educational attainment in Roşia Montană			
National educational attainment			

Data sources:
* Anon Roşia Montana Commune Social-Economic Development Plan, Alba County 2008 – 2013.
*1 Romania Government, http://www.romaniagovernment.com/counties-alba.htm
*2 Index Mundi, http://www.indexmundi.com/romania/demographics_profile.html
*3 I.N.S, National Institute of Statistics, Romania
*4 Bank News, http://english.banknews.ro/article/3053_net_average_salary_in_romania_grows_24p_mm_in_october_to_1,327_lei,_above_labor_productivity.html

2.1.3 Russia: Gay, Karabash and Mednogorsk

The demo sites in Russia are located in the Southern Ural Mountains region, with Gay and Mednogorsk located near the border with Kazakhstan and Karabash being located to the further north close to Miass (refer to figures 8 and 9 to see the location of the demo sites in Russia). Russia has a population of around 140 million (index Mundi, 2010c) and consists of the following ethnic groups: Russian 79.8%, Tatar 3.8%, Ukrainian 2%, Bashkir 1.2%, Chuvash 1.1%, other or unspecified 12.1% (based on the 2002 census) (c, 2010b).Russia has the lowest minimum wage in Europe which has been exacerbated by a 30 % fall in the value of the ruble against the euro and dollar (RIAN, 2010) (refer to tables 4, 5 and 6). Russia has the lowest life expectancy compared to the other demo sites (and other industrialised countries), with a decline seen in life expectancy in men and women between 1989 and 1994 (Shkolnikov, 1997, cited in Bobak *et al*., 1998). Cockerham (2000) suggests that societal norms and practices adversely affect life expectancy in Russian blue-collar workers, including the fact that Russian men having the highest per capita consumption of alcohol in the world, high fat diets and little or no time for exercise.

All three of the demo sites are relatively small towns, with total populations being: Gay 41, 621, Karabash around 15,000 and Mednogorsk 31,389 (refer to tables 4, 5 and 6). The national unemployment rate in Russia is around 8.9 % (Index Mundi, 2009d). Gay has active mines for copper, gold, pyrite and pyrophylite (see figure 10 for a picture of one of the closed pits on the edge of Gay). Gay is a purpose built town that grew in the 1950s with the expansion of mining in the region. Gay has a low unemployment rate estimated at 0.4 – 2 % compared to the national unemployment rate estimated at 8.9 % (table 4). The below average unemployment rate is reflected in site observations that Gay has a relatively affluent feel of the town compared to the site at Karabash (refer to the photograph of the smelter in figure 11), which has a much higher unemployment rate of around 8 %. Copper mined in Gay was used to supply Karabash with concentrates for smelting. Karabash has a higher ageing population than the other sites (the percentage of people over the age of 65 is estimated at 20.5 % in Karabash compared to the national average of 13.7 %) (refer to table 5). There are an estimated 1500 people employed at the smelter in Karabash which in a small population of around 15,000 people created major issues when the smelter closed down in the 1990s for a number of years (1991 to 1997) (Williamson *et al*., 2003). During the 1960s the population of Karabash peaked at around 50,000 people (ImpactMin Karabash demo site, 2010), when people were employed in mining in the area as well as at the smelter. The copper smelter in Karabash is owned by the Russian Copper Company and in 2008, Ausmelt Limited installed new environmental controls on the atmospheric emissions (Yokogawa, 2010). Mednogorsk is also a smelter town (refer to the photograph in figure 12) although it has a very different feel to it compared to Karabash. The visible extent of the environmental damage is less than in Karabash, although it is evident from viewing the town from a distance away that the smoke emitted from the smelter sits over the town, which lies in a valley. It is likely that this issue could be alleviated substantially by putting a taller chimney stack on the smelter. Mining in Gay still employs quite a large number of people still within the mining industry (5984) and it is not know how many people are employed at the smelter in Mednogorsk, however, it

will undoubtedly be a significant amount of the local population which is over 30,000. Refer to appendix 3 for further pictures of the demo sites.

Figure 8 Google map of the Southern Ural Mountains where the demo sites are located.

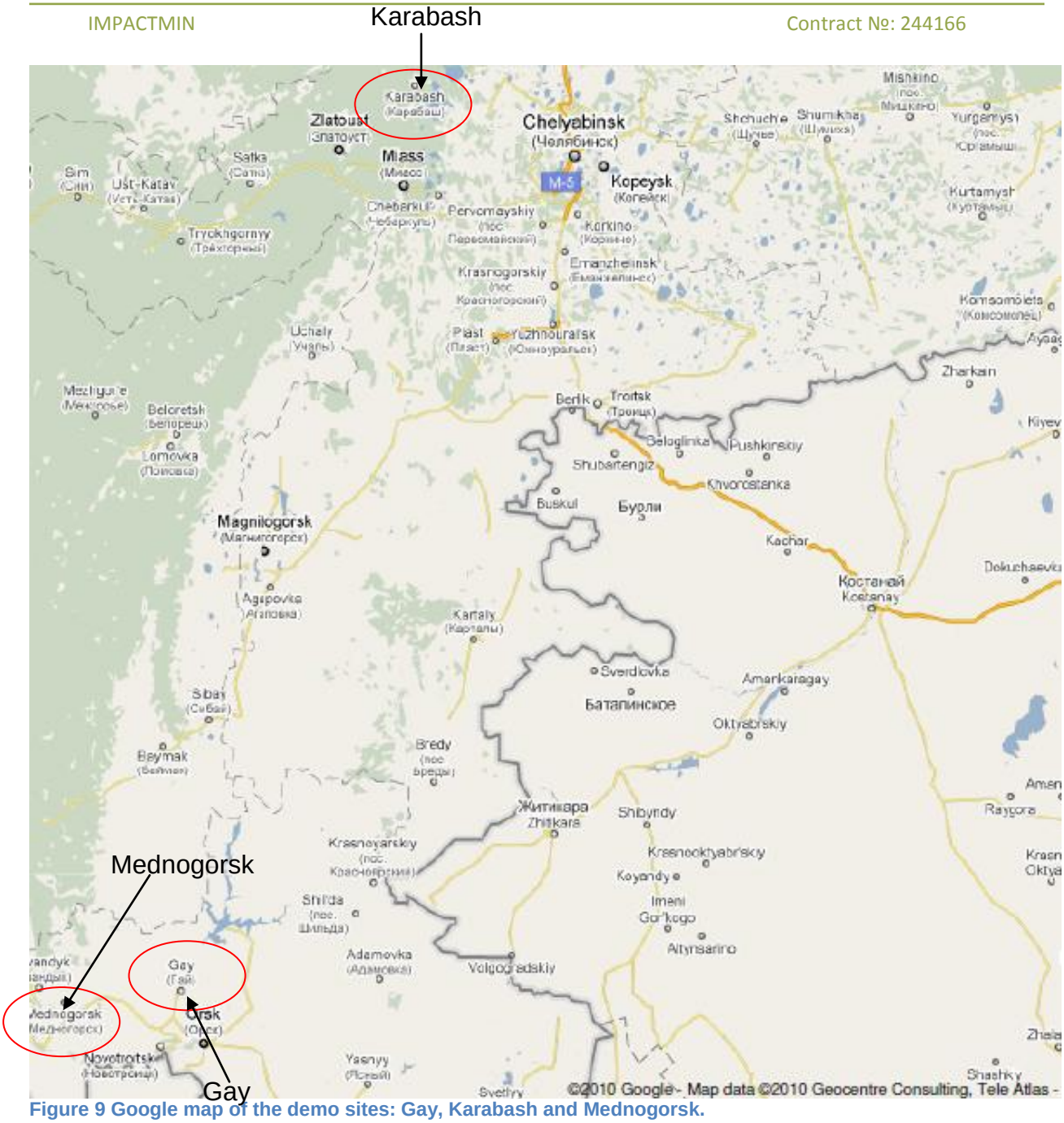

Figure 9 Google map of the demo sites: Gay, Karabash and Mednogorsk.

One of the main issues with the site at Karabash is the location of the smelter right next to the town, with the atmospheric pollution falling down in a wide radius around the town. The environmental impact from the smelter at Karabash is widespread; with an area towards Karabash Mountain to the east of the smelter having limited vegetation growing (this is evident on the photograph in figure 11). The main sources of contamination around Karabash are: emissions form the smelter, dust from waste dumps (the mines are inactive now in the area) and effluents from the smelter and leaching of minerals from the large scale waste dumps in the area (Udachin *et al*., 2003). Williamson *et al*. (2003) found that SO_2 emissions were up to 20,000 µg m^{-3}

(based on spot measurements) compared to the World Health Organisation maximum recommended levels of 500 µg m^{-3}. This is of concern given that environmental factors are estimated to contribute to an estimated 18-20 % of overall human health status, coming only second place to lifestyle (Revich, 1992).

When the smelter closed in Karabash the economic impact on the local population was profound, with high unemployment rates leading to local people allegedly wanting the smelter to reopen (the supposed view was that they still had the environmental pollution but now they had no jobs either) (e.g. Ekaterinburg, 2010). Karabash has been described as one of the most polluted towns in the world (e.g. Ekaterinburg, 2010) and was declared an ecological disaster in 1995 (Polluted Places, 2005, cited in Williamson *et al*., 2008). Aleksey Mironov, deputy chief physician allegedly stated "Residents here suffer from cardiovascular diseases; respiratory diseases, digestive system diseases and the level of oncological diseases here is rather high,"(Ekaterinburg, 2010). Most of the people in Karabash live in very close proximity to the smelter as the town grew to provide a place to live for people working at the smelter. Numerous studies have been undertaken looking at various aspects of the impacts of the smelter on the environment (e.g. Udachin *et al*., 1998; Williamson *et al*., 2004; Williamson *et al*., 2008). The scale of the waste tips around Karabash exacerbate issues of mine drainage, with large tailings dams covering an area greater than 2 million m^2 that are not kept below a layer of water and are therefore prone to causing large amounts of dust with associated metal particulates during the summer months (Williamson *et al*.; 2003). The issues with Karabash and the potential impact the emissions form the smelter pose on human health, relate not the to the level of total suspended particulates (TSP), but to the fact that the particulates emitted from the smelter are very small in size and are readily breathable (Williamson *et al*., 2003). The waste material from Karabash is high in sulfide minerals which creates issues with acid mine drainage that are evident all around Karabash. For these reasons, lakes in the vicinity of the mine are contaminated and acidic. Ausmelt Limited were responsible for updating the technology at the smelter in 2007, where it has since won two national Russian awards for the environmental improvements made to the smelter (in 2005 the Ministry of Natural Resources of the Russian Federation awarded ZAO Karabashmed the honorary title of "Leader of Environment Protection Activity in Russia", and in 2006 the plant General Director and the Chief Engineer were awarded "the Ecological Shield of Russia" for the achievements in environment preservation) (Sulphuric Acid on the Web, 2010). There are further health issues to residents within the town who grow and consume there own vegetables and who have animals like chickens, that uptake metal contaminants in the ground and through produce they consume. Similarly, relating to the consumption of fish from polluted lakes, trace metals can be readily up-taken by fish in to their flesh, scales and organs, and when consumed have the potential to impact on human health. The three options to prevent exposure of Karabash's residents to the pollutants emitted are: shut the smelter down, move the smelter, or move the town (ImpactMin Karabash demo site, 2010). People's perception of Karabash, and their view of the impact of the smelter, was something we wanted to investigate through the ImpactMin WP3 work.

There is less information available on the environmental impact of the smelter at Mednogorsk and it is probable that the environmental impacts of the current and past mining at Gay are more localised and have less potential to impact on human health due to the nature past and ongoing activities. It is understood that since the formation of the Russian federation in 1991 (and the breakdown of the USSR) that there has been a general reduction in effluent discharges and overall emissions of airborne pollutants due to the decline in industrial output (Udachin *et al*., 2003).Estimates were made that in the USSR, 39 % of the urban population lived under abnormal ecological conditions (Kotlyakov *et al*., 1990, cited in Revich, 1992). Back in the early 1990s, Revich (1992) found that chromosomal diseases in 'copper' cities in the Urals were 1.5 times more frequent, with Magnitogorsk (also in the Southern Ural mountains) having a two-fold prevalence of lung cancer, a possible reflection of the mining related industries in the area.

Figure 10 Photograph of a mine near Gay.

Table 4 Demographic data for Gay, Orenburg Oblast, Russia.

Gay, Orenburg Oblast, Russia			
	Data	Source of data	Year
Status of mine	Active mines for Cu, Au, pyrite, pyrophylite		
Population of Gay	41,621	Anon (*)	2002
Population of Russia	141.9 million	BBC (*1)	2010
Employment in mining at Gay	5984	Pers com. Aminov	2010
Unemployment rate in Gay	0.4 – 2 %	Pers com. Aminov	2009
National unemployment rate	8.90 %	Index Mundi (*2)	2009
Mean wage in Gay	Not known	Not known	
Mean wage nationally	$139	RIAN (*3)	2010
Local ageing population in Orenburg (% people over the age 65)	7 %	Pers com. Aminov	2009
National ageing population (% people over the age 65)	13.70%	Index Mundi (*4)	2009
Mean life expectancy in Gay - men (years)	60.6	Pers com. Aminov	2009
Mean life expectancy in Gay - women (years)	73.4	Pers com. Aminov	2009
National life expectancy men (years)	59.33	Index Mundi (*4)	2009
National life expectancy women (years)	73.14	Index Mundi (*4)	2009
Educational attainment in Gay (years of schooling)	Not known	Not known	
National educational attainment (years of schooling)	14 years	Index Mundi (*4)	2009

Data sources:

* All-Russia Population Census of 2002). Federal State Statistics Service. http://www.perepis2002.ru/ct/doc/1_TOM_01_04.xls. Retrieved 2008-07-25.

*1 http://news.bbc.co.uk/1/hi/8468185.stm

*2 http://www.indexmundi.com/russia/unemployment_rate.html

*3 http://en.rian.ru/russia/20090807/155752863.html

*4 http://www.indexmundi.com/russia/demographics_profile.html

Figure 11 Photograph of Karabash smelter. Note the limited vegetation growing.

Table 5 Demographic data for Karabash, Chelyabinsk Oblast, Russia.

Karabash, Chelyabinsk Oblast, Russia			
	Data	Source of data	Year
Status of mine/industry	Copper smelter active since 1910		
Population of Karabash	15,000	Anon (*)	2010
Population of Russia	141.9 million	BBC (*1)	2010
Employment in smelter in Karabash	1500	Anon (*)	2001
Umemployment rate in Karabash	8 %	Pers com. Aminov	2009
National unemployment rate	8.90%	Index Mundi (a)	2009
Mean wage in Karabash	Not known	Not known	
Mean wage nationally	$139	RIAN	2010
Local ageing population (% people over the age 65)	20.5 %	Pers com. Aminov	2009
National ageing population (% people over the age 65)	13.70%	Index Mundi (b)	2009
Mean life expectancy in Karabash men (years)	Not known	Not known	
Mean life expectancy in Karabash women (years)	Not known	Not known	
National life expectancy men (years)	59.33	Index Mundi (b)	2009
National life expectancy women (years)	73.14	Index Mundi (b)	2009
Educational attainment in Karabash (school leaving age)	Not known	Not known	
National educational attainment (school leaving age)	14 years	Index Mundi (b)	2009

Data sources:
* Anon, 2010. Karabash Site Demo Site Information, ImpactMin EU project.
*1 http://news.bbc.co.uk/1/hi/8468185.stm
*2 http://www.indexmundi.com/russia/unemployment_rate.html
*3 http://en.rian.ru/russia/20090807/155752863.html
*4 http://www.indexmundi.com/russia/demographics_profile.html

Figure 12 Mednogorsk smelter and copper sulphate plant.

Table 6 Demographic data for Mednogorsk, Orenburg Oblast, Russia.

Mednogorsk, Orenburg Oblast, Russia			
	Data	Source of data	Year
Status of mine/industry	Copper smelter and sulphuric acid plant		
Population of Mednogorsk	31,369	Anon (*)	2002
Population of Russia	141.9 million	BBC (*1)	2010
Employment in smelter in Mednogorsk	Not known	Not known	
Umemployment rate in Mednogorsk	Not known	Not known	
National unemployment rate	8.90%	Index Mundi (*2)	2009
Mean wage in Mednogorsk	Not known	Not known	
Mean wage nationally	$139	RIAN (*3)	2010
Local ageing population in Orenburg (% people over the age 65)	7 %	Pers com. Aminov	2009
National ageing population (% people over the age 65)	13.70%	Index Mundi (*4)	2009
Mean life expectancy in Mednogorsk men (years)	Not known	Not known	
Mean life expectancy in Mednogorsk women (years)	Not known	Not known	
National life expectancy men (years)	59.33	Index Mundi (*4)	2009
National life expectancy women (years)	73.14	Index Mundi (*4)	2009
Educational attainment in Mednogorsk (school leaving age)	Not known	Not known	
National educational attainment (school leaving age)	14 years	Index Mundi (*4)	2009

Data sources:

* All-Russia Population Census of 2002). Federal State Statistics Service. http://www.perepis2002.ru/ct/doc/1_TOM_01_04.xls. Retrieved 2008-07-25.

*1 http://news.bbc.co.uk/1/hi/8468185.stm

*2 http://www.indexmundi.com/russia/unemployment_rate.html

*3 http://en.rian.ru/russia/20090807/155752863.html

*4 http://www.indexmundi.com/russia/demographics_profile.html

2.1.7 Sweden, Kristineberg

Kristineberg is located in Vasterbotten County in Southern Lapland (refer to figure 13). Boliden AB mine zinc, copper, lead, gold and silver across the entire 'Boliden' area. They transport the ore elsewhere for processing to smelters in Finland, Norway and Southern Sweden (Boliden, 2008). Boliden is the third biggest supplier of copper in Europe (Boliden, 2008).

Kristineberg is a village that grew because of the mining and related industries in the area. Its current population is just over 300 and it is close to Malå, a small town with a population of just over 3000 (see table 7). Malå, and Sweden as a whole, both have low unemployment rates. Malå has an ageing population above the Swedish average (23.52 % compared to 17.4 % in Sweden (see table 7)). The high ageing population in Malå is a likely reflection of the decline in industries, such as mining, and the movement of people of working ages to other areas to seek further employment opportunities. Mining remains an important source of employment in the area, with a multiplier effect from mining helping sustain other businesses in the town. Currently, 390 people are employed by Boliden AB across the entire Boliden area. The numbers have declined in recent years. Kristineberg therefore has a declining population with the usual concerns for such a small place. For example, the shop in Kristineberg has closed and due to the general decline in the area and associated low house prices, people have taken to moving their entire house rather than selling it. Empty house plots can be seen in Kristineberg, where the whole house has been moved and even the paving slabs for the pathway have been taken. Refer to appendix 4 for further pictures of the demo site.

The mine at Kristineberg (see figure 14) is close to Hornträsk Lake, which has a highly acidic pH and is supposedly devoid of life. The cause of the acidity in the lake is unknown, although it is very close to the mine at Kristineberg so there is the potential for the mine to have had an impact to some degree. The causal factor of acidification of the lake remains unconfirmed though. The rocks in the area are sulfide rich, creating issues with acid mine drainage in the area. There are abandoned pits that have been used as rubbish tipping grounds just outside of Kristineberg.

Malå is the nearest town to Kristineberg. It is where people from Kristineberg shop at and has other community facilities such as the schools. The Malå Sami community actively practice reindeer husbandry in Vastercotten County, with a limit of 6200 reindeer for the herds in Malå. The reindeer are moved from the inland summer ground towards the coast in the winter. This can be done by foot of by using trucks depending on the weather (Rannerud - personal communication, 2010). There are potential impacts of industries like mining on the reindeer husbandry practices. Rannerud (Rannerud - personal communication, 2010) has found that the reindeer themselves are more affected by changes in infrastructure, such as through new roads created for install wind turbines in the area, than by mines in the area. This will be discussed further in the results section of report 3.2.

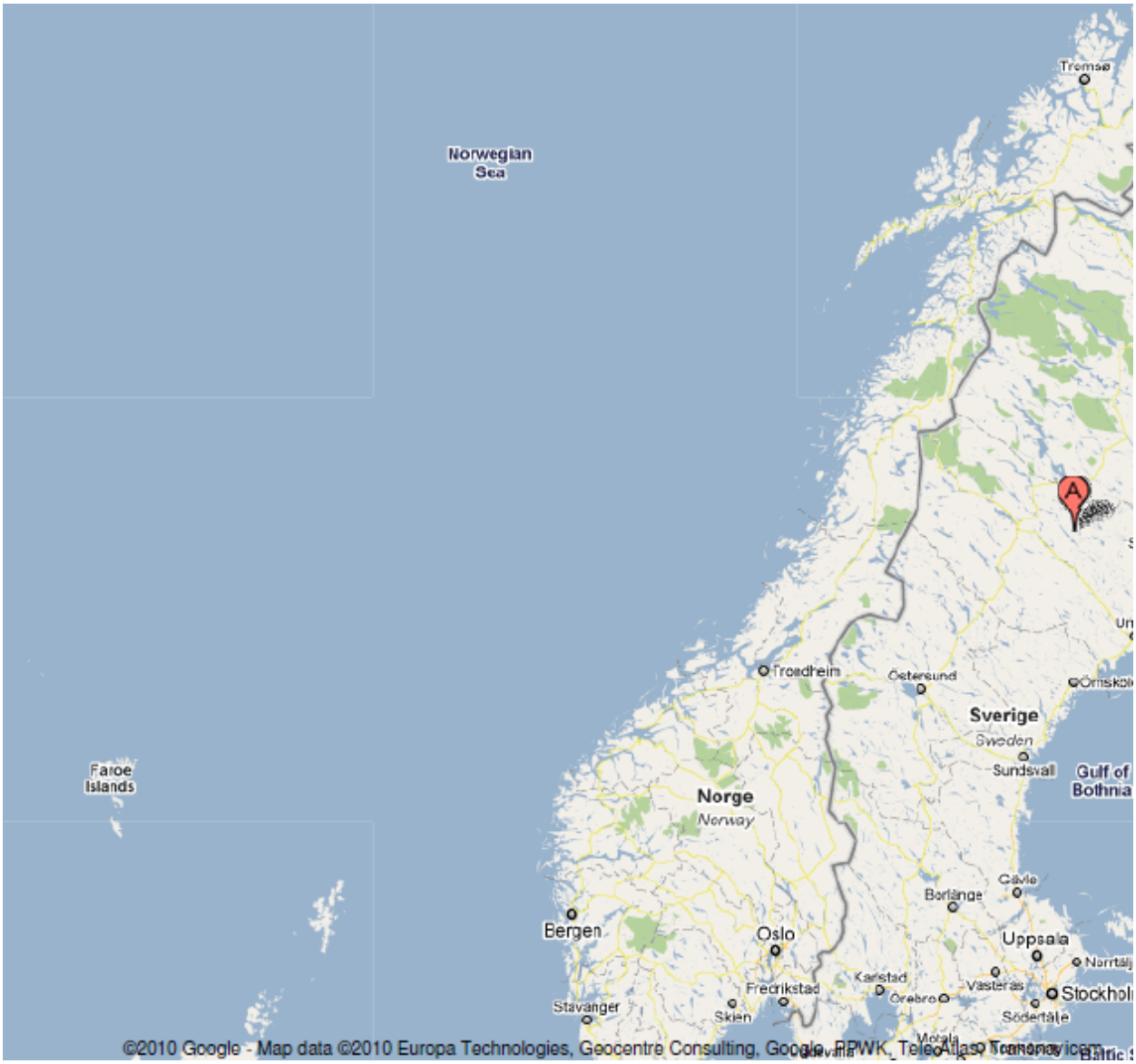

Figure 13 Google map of the demo site in Kristineberg, Vasterbotten County, Sweden.

Figure 14 Photograph of Kristineberg mine in Vasterbotten County, which is operated by Boliden.

Table 7 Demographic data for Malå and Kristineberg, Sweden.

*Malå/Kristineberg, Vasterbotten County, Sweden			
	Data	Source of data	Year
Status of mine	Active - mixed metal (Zn, Cu, Pb, Au and Ag across the entire Boliden area)		
Population of Kristineberg	331	SCB (*1)	2005
Population of Malå	3,295	SCB (*1)	2009
Population of Sweden	9,001,774	UMSL (*2)	2005
Employment by Boliden at mines in Kristineberg	390 across entire Boliden area (*3)		2008
Unemployment rate in Malå	3.35%	SCB (*1)	2009
National unemployment rate	3.80%	SCB (*1)	2009
Mean annual wage in Malå (SEK)	249,513	SCB (*1)	2009
Mean annual wage nationally (SEK)	260,695	SCB (*1)	2009
Malå ageing population (% people over the age 65)	23.52%	SCB (*1)	2009
National ageing population	17.40%	UMSL (*2)	2009
Mean life expectancy in Malå men (years)	76.3	SCB (*1)	2004-2008
Mean life expectancy in Malå women (years)	82.2	SCB (*1)	2004-2008
National life expectancy men (years)	78.19	UMSL (*2)	2004-2008
National life expectancy women (years)	82.74	UMSL (*2)	2004-2008
Education level in Malå (post compulsory)	62.60%	SCB (*1)	2009
National education level (post compulsory)	47.70%	SCB (*1)	2009
* Malå is the municipality center for Kristineberg			

Data sources:
*1 Statistiska Centralbyrån. www.scb.se
*2 http://www.umsl.edu/services/govdocs/wofact2005/geos/sw.html#People
*3 Boliden Sustainability Report, 2008. http://vp031.alertir.com/files/press/boliden/Boliden_HR09_eng.pdf

2.1.8 UK, Cornwall

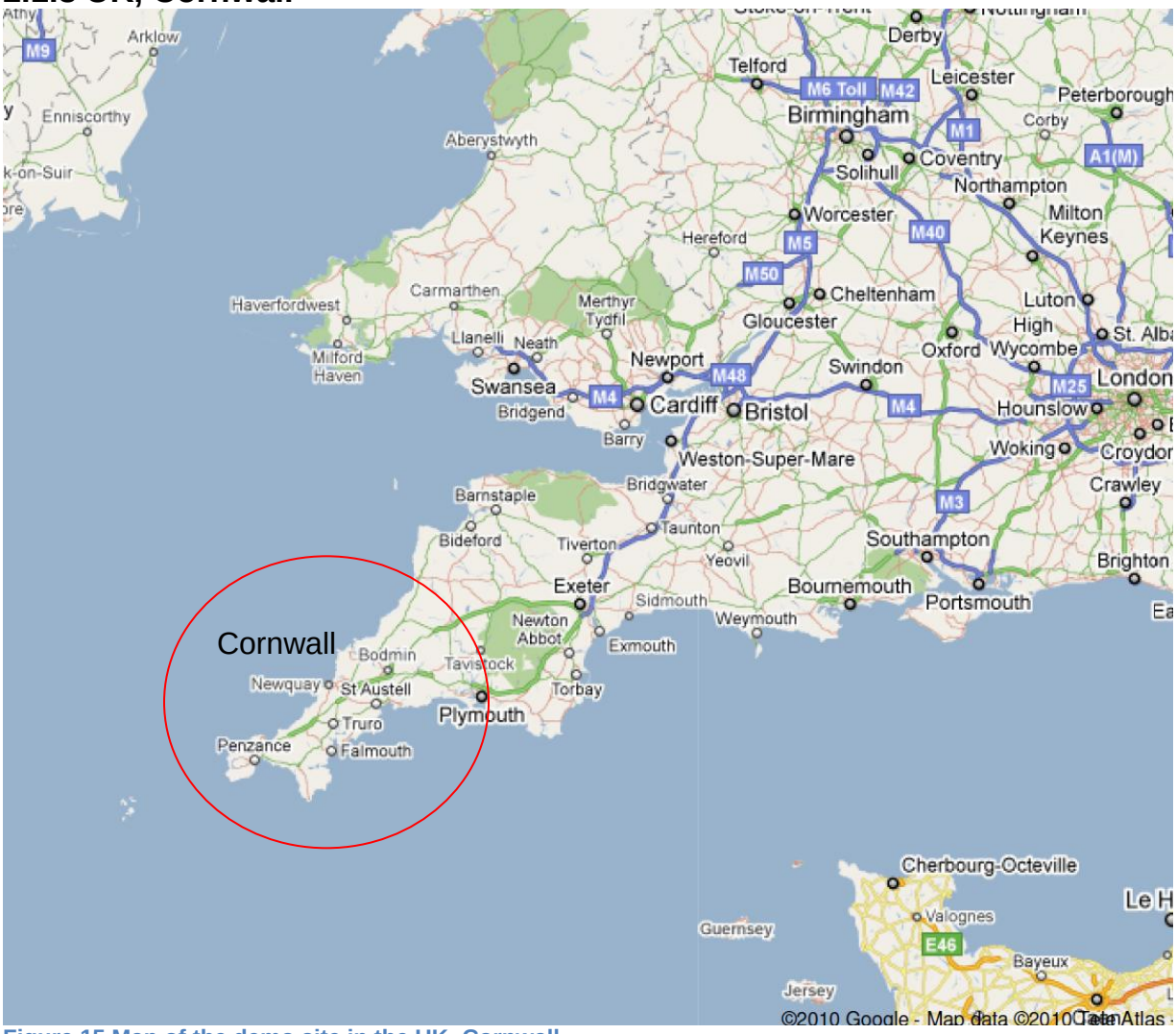

Figure 15 Map of the demo site in the UK; Cornwall.

Cornwall is located in the south-west of England (see figure 15 for location). Compared to English standards, it is considered to be relatively remote and it is also economically behind based on English economic standards, with Cornwall receiving Objective One and Convergence Funding as it is technically classed as one of the most economically deprived areas in Europe. Cornwall has a growing population and an above average ageing population (population over the age of 65 is 21.26 % compared to the UK average of 16 %), where most economically active people work in service related industries such as tourism (Nomis, 2009). Cornwall has seen a decline in jobs in primary industries like mining, agriculture and fisheries, although it has below average unemployment rates for the UK (Nomis, 2009). The mean wage is £20,950 compared to the UK average of £25,490 (Nomis, 2009). Cornwall has relatively high costs of living and pressures exist on housing stock, with Cornwall and the Scilly Isles having the most number of 'second homes in the UK (Guardian, 2006). This increases the overall cost of housing in the area which then adds pressure to local people, who as stated above,

have a lower than average wage on which to afford to live in houses that cost above average prices to buy or to rent.

Mining in Cornwall dates back thousands of years, with tin from Cornwall being exported to the European continent as far back as 4000 years ago (Buckley, 2005). Cornwall was once regarded as the tin mining 'capital' of the world. Furthermore, in the 18th century Cornwall was producing two thirds of the worlds copper (Cornwall Mining, 2010). Metals produced in Cornwall are heralded with having had a major contribution to the industrial revolution in Britain (Buckley, 2005). Cornwall was one of the first industrialised regions in Europe with communities growing around the mining industry Cornwall Mining, 2010). Fluctuations in the prices of metals saw a decline in copper and tin prices during the 1860s and 1870s, with many skilled mine workers emigrating around the world (Buckley, 2005). Over 200,000 people are estimated to have left Cornwall after 1830 (Cornwall Mining, 2010). The last tin mine closed in 1998 at South Crofty near Pool. After it closed there was a large-scale emotional response from local people either working in the industry or who had been connected in some way, with marches through the nearby towns as it was seen as an end of an era. Western United Mines (WUM) are currently in the process of attempting to reopen South Crofty (refer to figure 16) to extract copper, tin and zinc in addition to aggregates that could be used in building industry (WUM, 2010). Currently the only active mines in Cornwall operate around the St Austell region, where Imerys extract china clay (Kaolin). Figure 17 shows one of the conical waste tips left over from china clay mining in the 'Clay Lands' around St Austell. Cornwall and West Devon were granted World Heritage Status (WHS) for the unique mining landscape (refer to figure 18) in 2006, with multiple sites across Cornwall and Devon included in the WHS (Cornish Mining World Heritage, 2010). Cornwall has capitalised on its mining heritage and now has many museum and heritage attractions, such as Geevor tin mine and Wheal Martyn China Clay Museum. Refer to appendix 5 for further pictures of the demo site.

Cornwall prospered economically in the 18th and 19th centuries because of mining. Mining in Cornwall has had a lasting impact on the society, with communities all around Cornwall developing because of the mines and even the growth of Methodism in Cornwall being linked to the expansion of mining in the region. From the perspective of its physical landscape, Cornwall remains forever changed because of the metal mining that has gone on for thousands of years. There are environmental issues created from the past metalliferous mining in the region, with arsenic contamination being one of the main issues caused by past mining and minerals processing in the region. Sites of former china clay pits in Cornwall have undergone extensive remediation projects, such as the China Clay Woodland Project which followed on from the heath land restoration project, to restore the landscape that has been locally referred to as the 'Cornish Alps' due to the conical shape of the waste tips (Natural England, 2010) (refer to figure 17).

Imerys currently employ around 1000 people in Cornwall. They are still a large employer in a county of just over half a million people (see table 8). The interties lies in assessing how people perceive the mining industry in Cornwall relating to the current mining carried out by Imerys around the St Austell region and the potential for metal mines to

reopen. Many of the former metal mining areas have had regeneration initiatives supported by European funding from the Convergence Program and Objective One. Regeneration projects (e.g. CPR Regeneration) around one of the main metal mining areas (of Camborne Pool and Redruth (CPR)) have included projects to develop strategy to drive changes, in addition to projects that focus on changing the landscape, developing businesses, improving infrastructure and expanding the skill base and developing knowledge economy.

Figure 16 Photograph of South Crofty mine which closed back in 1998. Attempts are being made to reopen this mine to extract tin, copper and zinc.

Figure 17 Photograph of the Clay Lands area near St Austell in Cornwall.

Figure 18 Photograph of the landscape that helped Cornwall get World Heritage Status.

Table 8 Demographic data for Cornwall, UK.

Cornwall, UK			
	Data	Source of data	Year of data
Status of mines	Active china clay mines and closed metal mines (Sn, Cu)		
Population of Cornwall	533,300	Nomis *	2009
Population of UK (million)	61.8	ONS (*1)	2010
Employment in mining - Imerys China Clay	1000	Varcoe, personal communication	2010
Employment in metal mining - Western United Mines	63	Webster, personal communication	2010
Unemployment rate in Cornwall	5.60%	Nomis (*)	2009
National unemployment rate	7.90%	Nomis (*)	2009
Mean annual wage in Cornwall	£20,950	Nomis (*)	2009
Mean annual wage nationally	£25,490	Nomis (*)	2009
Overall population trend in Cornwall	Growing	ONS (*3)	2009
Cornwall ageing population (% people over the age 65)	21.26%	ONS (*3)	2009
National ageing population (% people over the age 65)	16%	ONS (*4)	2008
Mean life expectancy in Cornwall Men (years)	78.3	ONS (*5)	2005-2007
Mean life expectancy in Cornwall Women (years)	82.7	ONS (*5)	2005-2007
National life expectancy Men (years)	77.7	ONS (*5)	2007-2009
National life expectancy Women (years)	81.9	ONS (*5)	2007-2009
Educational attainment in Cornwall (5 a*- c GCSE)	68.70%	DCFS (*6)	2009
National educational attainment (5 a*- c GCSE)	70%	DCFS (*7)	2009

Data sources:
* https://www.nomisweb.co.uk/reports/lmp/la/1967128581/report.aspx?town=cornwall
*1 http://www.statistics.gov.uk/pdfdir/popnr0610.pdf
*2 http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15148
*3 http://neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=3&b=4&c=cornwall&d=13&e=13&g=430886&i=1001x1003x1004&m=0&r=1&s=1286805351197&enc=1&dsFamilyId=1813
*4 http://www.statistics.gov.uk/CCI/nugget.asp?ID=1352&Pos=2&ColRank=2&Rank=224
*5 http://www.statistics.gov.uk/hub/population/deaths/life-expectancies/index.html

*6 http://www.education.gov.uk/cgi-bin/performancetables/group_09.pl?Mode=Z&Type=LA&Begin=b&No=908&Base=g&Phase=1&F=1&L=50&Year=09
*7 http://www.education.gov.uk/cgi-bin/performancetables/group_09.pl?Mode=Z&Type=LA&Begin=b&No=908&Base=g&Phase=1&F=1&L=50&Year=09

Chapter 3 Methods of data collection (work undertaken at each site)

To maximise the quality of the information collected, multiple methods of data collection were carried out. A survey was administered across all of the project demo sites in addition to interviews and focus groups of key stakeholders and informal decision leaders within the communities who are linked to mining industry. Denzin and Lincoln (2003) underline the importance of using observational methods to gather material about the social world and the significance of simply being there and getting a feel for the places and people. In a study like the present one, the value of site visits cannot be underestimated. The information taken from general observations and interviews are very informative in attempting to analyse the relationships that exist between various stakeholders at each of the different sites.

The work undertaken in this project was granted approval by the University of Exeter ethics committee prior to any research commencing. Participants in the survey or interviews were made fully aware of the purpose of the research they were becoming involved in and they were fully informed of how the results would be used. People were made aware that is their choice to participate in the research and also, in the case of interviewees, they were able to decide to withdraw from the project at any point should they decide to. By taking an honest approach to ensuring different stakeholders were aware of the particulars of the project and how the data collected would be used, some people did chose not to participate in the research based on their own reasons and free will. The interviews undertaken adhered to the principle of informed consent following principles as described by Denscombe (2002):
Informed:

- Aspects of what is to occur and what might occur are disclosed to the subject.
- The subject should be able to comprehend information.

Consent:

- The subject is competent to make a rational and mature judgement.
- Agreement to participate is voluntary and free from coercion and undue influence.

Anonymity was provided and guaranteed for participants who completed the survey but not for those people who participated in the interviews due to the importance of knowing who had been interviewed for research purposes. Keats (2000) stresses that sometimes for the purpose and benefit of the research, it does not make much difference whether the names are used or withheld. The ethical issue regarding anonymity of interviewees relates to whether anonymity gives people further freedom to express one's views than if a person identity if revealed (Keats, 2000). It was not considered in the context of the interviews being undertaken in this project that by providing anonymity people would feel more able to express their views.

A workshop was organised in Cornwall in May 2010, followed by further consultation on the suitability of questions being used in the survey. Through this process a survey was designed with direct involvement and input from partners at each of the ImpactMin demo-sites. This enabled issues that were specific to each of the demo sites to be

addressed by questions in the survey, in addition to covering questions that helped answer the general aims of the ImpactMin project. By having a core element to the survey, with the same questions asked across multiple sites, we were then able to make a cross-comparison of people's responses to different issues. The site-specific questions were there to provide information on what different stakeholders think of mining and the related issues at the sites they live and/or work at. The surveys for all of the demo sites were constructed to provide a mix of quantitative responses from multiple choice/ranked questions and open ended qualitative responses. The survey was carried out anonymously and included a detailed description of the purpose of the research and how the results would be used. The survey was designed with the aim of finding out things about people's lives (e.g. do they live close to a mine) in addition to asking them for their opinions on certain issues e.g. what (in your area) should mining companies do in order to avoid negative impacts and improve positive impacts (refer to appendix 6 to view the surveys that were carried out across each of the demo sites). Partners working on the ImpactMin project helped translate surveys into the correct language to administer them at their demo site: Romania (Romanian), Sweden (Swedish), Russia (Russian) and Bosnia Herzegovian (Croatian).(refer to table 9 to see the numbers of surveys completed at each of the sites).

Interviews and focus groups are ways of finding trying to understand people. Interviews create situations and understandings that are influenced by the interviewer, and the very matter of asking people questions and receiving answers is not a neutral tool (Denzin and Lincoln, 2003). Interview/focus group questions for the ImpactMin work were designed to provide amore in-depth insight into issues across each of the demo sites (refer to appendix 7 for interview questions/focus group questions used across each of the demo sites). The questions used at each of the demo sites were subject to alteration or addition of further questions as the work progressed across each of the sites and further issues evolved that could be explored. This element of flexibility provided the optimum basis to ensure that the core questions were answered by stakeholders at the sites and further useful qualitative data were collected where possible. Some of the issues that are evident at each of the sites only came out as more stakeholders were interviewed, and therefore, having the ability to add to the set list of questions provided additional benefit, particularly when looking at the relationships between stakeholder groups.

There were issues with the differential in understanding words used during interviews carried out in different countries. As noted by Denzin and Lincoln (2003), it must be acknowledged that sometimes, and this was particularly exacerbated by language barriers and cultural influences, questions have to be rephrased to aid understanding and provide further clarity in what is being asked to the interviewee. It was essential that given the language and cultural differences between interviewer and interviewees across the five countries, that we could adapt questions to assist understanding, as the very meaning of words evidently fluctuated between sites. The nature of human beings and how we all differ and respond when asked even the same set of questions, accounts for the variation seen in the time taken for each of the interview or focus groups carried out. In Romania, Sweden and Bosnia Herzegovina all interviews were

carried out through a translator who enabled a two-way dialogue to be had through myself as the interviewer. In Cornwall, as there were no language issues, no translator was required. In Russia, however, interviews were carried out in Russian and translated at a later date. Keats (2000) discusses the benefits of carrying out interviews in the respondent's native language and this was followed throughout the ImpactMin WP3 work undertaken, unless respondents wanted to answer questions in English. The issues that can occur is the potential in group interviews for the best linguist to dominate a group and in any type of interview for language to act as an additional barrier to obtaining unbiased answers (Keats, 2000). Keats (2000) discussed further issues where cross-cultural attitudes can affect research undertaken e.g. gender issues when, perhaps, a female interviewer interviews a man on her own in a culture where this is not deemed acceptable. This was on the whole not an issue we found across any of the demo sites.

Focus groups (For the purpose of this study the term focus group is used to denote more than one interviewee being present) were generally found to be very useful, creating an environment where having multiple people in the interview provoked more conversation than if people had been interviewed on their own. Both the interviews and focus groups were carried out in quite a relaxed manner to try to ensure people felt as comfortable answering the questions as they could be (and to ensure s suitable trust and rapport was developed between the interviewer and interviewee(s). At the same time, however, every interview and focus group has a pre-set structure in place with a directive element maintained by the interviewer. Throughout all of the interviews I tried (as the main interviewee) to avoid being in a situation where I was being asked questions from the interviewees that alluded to my own person opinions and I did not engage in using my opinions to influence the perception of the interviewees.

A selection of suitable stakeholders to interview was arranged through discussions with ImpactMin partners across the demo sites about who they thought would be suitable to interview given the range of issues at each of the sites and therefore the diversity of stakeholder groups applicable to each site. In Bosnia Herzegovina, at the Vihovići site for example, there is no mining at present so we could not interview anyone from the mining industry. To compensate for this we interviewed a geologist and mining engineer who both had active involvement in the rehabilitation work that had been undertaken at Vihovići and in other mining in the region, most notably the bauxite mines near Čitluk (close to Mostar). At Vihovići we also tried to include in one of the focus groups a diverse range of people from different professional backgrounds to establish their views on mining in general and also on what they thought should happen to the site. In Russia, however, it was difficult to pre-arrange interviews as we had managed to do across many of the other sites. In Romania it was made explicit that within Roşia Montană there were certain 'informal decision makers/leaders' within the community who had a lot of influence and ultimately reflected the views and voice of many local people. We tried to interview a broad selection of the so called 'informal decision makers/leaders' across different sites. 'Informal decision makers/leaders' differed from site to site, reflecting the variation across sites in the importance of different people within a community.

A general observation that can be made relating to interviewees willingness to have the interview recorded (when making this observation across the sites), is that generally people were happy to have the interview recorded and it was only for some of the interviews in Romania and one in Cornwall that people specifically requested that the interviews were not recorded. In Roşia Montană, the international media attention that the gold mining project has received has made most local people very receptive to wanting to have their voice heard and therefore most people were happy to complete a survey or participate in an interview or focus group. Attempts were made to interview the main opposition NGO 'Save Roşia Montană' and they said they were too busy to be interviewed. Greenpeace Romania and the Cultural NGO (both groups opposing the mine reopening in Roşia Montană, were interviewed. In Sweden we managed to interview a range of stakeholders across Vasterbotten County who were all involved in all aspects of the mining industry in that region (people from the government, local community and mining industry. Arranging interviews with a diverse range of stakeholders in Cornwall was relatively straight forward due to it being where the University of Exeter who are leading the WP3 work is based. This meant the knowledge was already there on who key stakeholders were who should be interviewed as part of the research.

It is our intention to provide feedback to the people we have interviewed to enable them to see how their participation has aided the research and to let them read the outcomes of the work undertaken.

Table 9. Surveys completed across the ImpactMin demo sites.

Country	Demo site	Number of surveys completed
Bosnia Herzegovina	Vihovići	125
Romania	Roşia Montană	97
Russia	Gay	41
Russia	Karabash	40
Russia	Mednogorsk	32
Sweden	Kristineberg	~ 70-80 tbc
UK	Cornwall	~ 300 tbc

3.1 Bosnia Herzegovina, Vihovići

List of interviewees

- Josip Marincic – Geologist and member of the Geological Society of Mostar and member of the Board of Directors of Croatian Mining.
- Ivan Mikulic, mining engineer from Mostar.
- Interview with Šimon Zadro – ex-miner at Vihovići 1965-1966 who currently lives in Mostar.

- Focus group with 8 academic staff and students from the University of Mostar (including professors, Master of Science and students from the department of Civil Engineering) who live work in Mostar and live either in the city of close by.
- Focus group with 9 people who live and work in Mostar (including people from the following professions: Urban City department and Planning, Department for Economy, Ministry of Economy and City Infrastructure, City Environmental Protection, a medical doctor and a German teacher).

3.2 Romania, Roşia Montana

List of interviewees

- Focus group with 5 students from the local University.
- Focus group with 7 geology staff from RMGC.
- Focus group with 4 staff from the finance team at RMGC (administrator, accountant, HR department).
- Interview with Claudia Buruiana, sociologist for RMGC.
- Focus group with 7 teachers from local schools (all ages).
- Interview with Crisanta Lungu, Greenpeace Romania regarding Roşia Montană.
- Focus group with 4 journalists from the local paper 'Ziarul de Apuseni': Radu Ioan, Tomus Stefan, Golec Douc, Toderas Roxana.
- Interview with Andrei Jurca the local medical doctor from Roşia Montană.
- Interview with Valentin Rus the former state owned mine manager from Roşia Montană.
- Interview with Eugen Cornea (Zeno), Cultural Foundation opposition NGO against Roşia Montană mines reopening.
- Interview with Cristi Plantos, Archaeologist, Roşia Montană.
- Interview with Eugen Furdui the mayor of Roşia Montană commune.
- Interview with a couple who have been relocated by RMGC from Roşia Montană to Alba Iulia.
- Interview with a lady who has been relocated by RMGC from Roşia Montană to Alba Iulia.
- Focus group with 6 people from 'Pro Dreptatea' a pro mining NGO in Roşia Montană.

3.3 Russia

3.3.1 Gay

List of interviewees

- Lady in shop (her son had been killed in a mining accident).
- Chief geologist of a mine.

3.3.2 Karabash

List of interviewees

- 2 ladies in Karabash (one of whom was a quarry chief (manager).
- Mayor of Karabash.

3.3.3 Mednogorsk

List of interviewees

Mayor of Mednogorsk.

3.4 Sweden, Kristineberg

List of interviewees

- Focus group with 4 people from Vasterbotten County administrative Board in Umeå (Ylva Ågren – mining and environmental permits, Åsa Laurell - different wildlife protection issues, Katrine Nygren - cultural heritage, Percy Gustavsson – good general knowledge of the county and how the county administrative boards work).
- Interview with Leif Bildström, Geotechnician from Sveriges Geologiska Undersökning (SGU – Swedish Geological Society)
- Focus group with Lennart Gustavsson chairman of Georange (a pro mining NGO), Jörgen Johansson (Principal of Malå school - years 13 to adults) and Stig Renström (ex-principal of Malå school).
- Focus group with 4 Miners from Boliden
- Interview with Linda Åström Löfgren from Boliden coordinator at Kristineberg mine concerning health, safety and environment
- Interview with a retired ex-miner from Kristineberg, Per Erik Hölmlund.
- Interview with Franco Attini, owner of Malå Hotel
- Focus group with 3 senior Sami community people; Jan Ranneureud, Anders, Lars
- Interview with an employee of a state owned forestry company; Tord Karlssen.
- Interview with Viktoria Gavelin and Thomas Jonsson, youth workers at kristineberg youth centre (Fritidsgård). We also interviewed 5 young people aged under 10 - 13 years old who were attending the youth centre run by Viktoria and Thomas (all of the children were from mining families).
- Focus group with 3 members of the Malå Sami community including Jan Rannerud, Lars Erik Frank (vice chairman of Malå Sami community and ski instructor) and Anders Jonsson (sawmill worker).

3.5 UK, Cornwall

List of interviewees:

- Interview with Ann Pattison, senior planner Cornwall Council Natural Resources team.
- Interview with Bert Biscoe, Truro councillor.
- Interview with Mark Kaczmarek, Cornwall Council Cabinet Member for Housing.
- Interview with Carolyn Rule, Cornwall Council Cabinet Member for Economy and Regeneration.
- Interview with Julian German, Cornwall Council Cabinet Member for Waste Management, Climate Change and Historic Environment.
- Interview with John Webster, Western united Mines (WUM, South Crofty).

- Interview with Chris Varcoe, Mineral Services Manager - Business Development and Services, Imerys (China Clay mining).
- Interview with Bill Lakin, Chair of Trustees of the Pendeen Community Heritage Trust (who manage Geevor Tin Mine Museum).
- Interview with Nick Coppin, Managing Director of Wardell Armstrong International, a mining consultancy based in Cornwall.
- Interview with Kirsty Davies, project manager of the Heartlands Project (regeneration project in Camborne Pool Redruth (CPR – big mining area in Cornwall).
- Interview with Mark Richards, Aeronautical engineer living and working in Brea (next to South Crofty where they are trying to reopen the mine to extract tin, copper and zinc).
- Interview with Nigel Tipple Chief executive CPR Regeneration.
- Interview with lady X from Brea (next to South Crofty)

Chapter 4 Discussion

CSR and the socio-economic impacts of mining

Mining companies are worried about gaining access to new projects, and ultimately to longer-term supply considerations given the current intensity of competition for resources (KPMG, 2010).Despite the recent issues with the global economy, mining companies need to increase mineral production if they are to ensure the security in supply of minerals globally (Ghose, 2009). There are already worldwide issues developing regarding the supply of certain metals, for example, China currently supply over 90 % of the worlds rare earth elements (REE) and recently suggested that they would be exporting less of the REE to ensure they had their own supplies (BBC, 2010b). This highlights the danger of having a reliance on one source for metals that we are becoming increasingly reliant on, with REE being essential in manufacturing computers and electronic equipment, in addition to being vital in making motors in electric cars.

Our global economy is reliant on natural resources in order to prosper, yet in what is regarded as the ‘resource curse’, countries that are rich in natural resources are alleged to have slower economic growth than countries that are scarce in resources. Boyce and Emery (2010) used data during a 30 year period in the US states from 1971-2001 and found that although resource abundance was negatively correlated with economic growth rates, that it was, though positively correlated with income levels. Thus, in this study, Boyce and Emery (2010), declare that there is no ‘resource curse’ but a ‘resource blessing’. Pegg (2006) also suggests that mining can make a contribution to reducing poverty, but only when a variety of pre-conditions are met, including: good governance, security arrangements so human rights are given legal status and are subsequently adhered to, and finally that there is an awareness made relating to the fact that larger structural or macro-economic changes can influence the potential success of mining in reducing poverty in a country. There are further issues relating to stakeholders being a position to exercise their ‘stake’ and ‘claim’ there rights, with questions raised over the

power of indigenous communities, for example, to not give their 'consent' to a project and thus having the overall power to veto a project that affects their lives (Pegg, 2006). A suggestion was made that the term stakeholder must be used to include those with 'strong' voices, such as NGOs as well as those with 'weaker' voices who have little decision making power of influence (Solomon *et al*., 2008). The World Bank uses the phrase of aiming for "broad community acceptance of developments" rather than referring to the word 'consent' (Pegg, 2006). Community can also be difficult to define as it is has diverse meanings to people and groups and is ultimately based on individual perception. Kapelus (2002) discusses the importance of defining what a community is (e.g. where is the boundary), relating this to being one of the key challenges of CSR.

The potential findings of hundreds of billions of pounds worth of mineral reserves in Afghanistan (including reserves of Copper, iron and lithium), with suggestions being made that the prospective wealth that could be generated from these mineral reserves could also lead to further endemic conflict within the country (Williams, 2010). Experiences in Botswana with diamonds and Chile with copper have, however, shown that mineral-lead development can sustain economic growth in a positive manner (Pegg, 2006).

When reviewing best practice across the demo sites, it is important to understand, as noted by MMSD (2002), that the concept of what constitutes 'best practice' requires local solutions to local problems, thus best practice at one mine site may not work as best practice at another site. Similarly, whilst there can be good mine operations, there can also be bad ones. As suggested by Jenkins and Yakovleva (2006), we have 'leaders and laggards in the mining industry, a reflection of how organisations could be classified in any industry. This study of the top 10 mining corporations (from 1991 to 2003) displayed an increasing trend over time in reporting sustainable development and CSR issues, although it also highlighted considerable variation that still exists in reporting practices and social and environmental disclosure (Jenkins and Yakovleva, 2006). The general trend commented on by Jenkins and Yakovleva (2006), reflects the overall change in attitude to what is deemed 'acceptable' from an environmental and social perspective as repercussions of mining projects. The balance of cost to benefit ratios of mining projects is constantly moving towards the facts that the benefits cannot come at any cost. This defines what responsible mining is; understanding the environment from a physical and social perspective and using this understanding, alongside the best level of technology possible, to mitigate against potential negative aspects and to engage with the community to consider their views and create a CSR program that can have lasting benefits.

The ability of social movements and opposition groups to influence a decision of whether a mine should open or not, must not be underestimated. Roşia Montană, for example, sits in a position of having a relatively high level of community support for the project within the local community, in addition to the support of local government (based on initial project findings and observations), the opposition NGOs and in particular 'Save Roşia Montană' have led an international campaign to oppose the opening of the mine.

This is likely to have contributed to the delay in the mine reopening and the question remains still as to if the mine will reopen.

CSR projects and engaging in CSR, is a way in which mining companies can actively showcase their values and commitment to the world (Kapelus, 2002). CSR has different meanings in the context of different projects (and communities). It is therefore essential that CSR programs engage with all stakeholder groups, listen to their views and observe the overall needs and impacts of any development on an individual community. This inevitably makes it more time consuming to find out what is going to work best at every site as there is no 'one size fits all' approach. Assessing the needs of each community on the basis of their individual needs and situation, can, however, be instrumental to the support a project needs to get of the ground. Jenkins (2004) suggested that research should look at whether community developed programs deliver socially responsible outcomes, or if they create mechanisms to control a community through dependency. CSR needs to attempt to create change from within a community at a grassroots level. This is the only way change can be sustainable in the long term. Micro-credit projects aimed at promoting local businesses are one way in which this can be done. For example, RBM (Richards Bay Minerals – Rio Tinto owned) established a Business Advice Centre to assist residents in setting up their own businesses by providing training opportunities and loans (Warhurst, 2001). Warhust (2001) reflects on the ability of this scheme to help generate 2500 new jobs and establish 900 businesses. Roşia Montană is also establishing a micro-credit project and there is the potential to use this as an opportunity to create businesses that will last beyond the life expectancy of the mining project.

Despite the concept of mining being 'sustainable' often regarded as an oxymoron, due to minerals being non-renewable (Ghose, 2009), the movement towards responsible mining has seen companies make increasing efforts to take a holistic approach to assessing and minimising the potential impacts of mining, ensuring measures are taken to mitigate against any potential deleterious socio-economic and environmental impacts. Solomon *et al*. (2008) conclude that despite businesses being increasingly aware of the importance of social dimensions and their interactions, that they remain the least understood aspect of sustainable development. Hilson and Murck (2000) relate the need for the mining industry to commit to improving their environmental performance, whilst addressing the needs of stakeholders and the community from the outset of any development, thus taking steps to put the concept of sustainable development into practice. It is evident that implementing responsible mining practices is a difficult task, as every stakeholder is going to have a different perception of what they regard is responsible. Mining companies will increasingly continue to develop their CSR whilst the expectations of stakeholders and their 'voices' grow.

Whilst it is evident there is confusion in what and how industry-lead initiatives and codes should be followed, there are clear difficulties in creating, governing and evaluating the effectiveness of such initiatives (Solomon *et a*l., 2008), for example, the creation of ISO 26000 2010 on social responsibility is yet another voluntary code that companies can follow. It would be interesting to carry out research on how effective these standards are

in generating change, assessing this from the perspective of different stakeholders from businesses, government and the community.

4.1 Bosnia Herzegovina, Vihovići

Vihovići is an interesting case study for many reasons. It reflects the consequences that conflicts can have on industries like mining and how the subsequent breakdown of society can alter the long-term future of a mine site. Vihovići has undergone extensive rehabilitation, although there are remaining problems that still need resolving, such as the issues of slope stability around the pit and the illegal houses that have been built very close to the unstable slopes. Mostar is evidently still suffering economically from the impacts of the conflict, with many buildings remaining in a poor state of repair through damage sustained during the conflict. The mean income in Mostar is relatively low compared to other European countries and Mostar also has high unemployment rates. One of the most interesting aspects of using Vihovići as an example in this project is to assess what different people think of how Vihovići should be developed in the future. Do they think mining is over and if so, how do they propose the former coal mine site is used in the future?

4.2 Romania, Roşia Montana

Roşia Montană Gold Corporation (RMGC) is in the process of trying to reopen former state owned gold mines, where mines have operated in the area for around 2000 years. They have had to acquire land (and still require purchasing further properties and land prior to the project commencing). Similar to the largest gold mine project in South America, at Cajamarca, land acquisition has caused conflict. In Cajamarca, as in Roşia Montană, it was not acquiring the land that has caused the problems, but the conditions (including the price) obtained for the land and complications existing due to issues of land ownership (Bebbington *et al*., 2008). The second case study used in the study by Bebbington *et al*. (2008), where a copper deposit in Cotachachi, Ecuador, remains un-mined, the people of Roşia Montană sit awaiting a decision regarding the reopening of the mine that would provide jobs and much needed money to the local economy.

Roşia Montană was the site where the most complex relationships were seen between different stakeholders, something that will be discussed in further detail in ImpactMin deliverable 3.2. One of the issues that is apparent from Roşia Montană is the importance of assessing how community is defined and who will be impacted by a mining project. Whilst RMGC had created an environmental boundary for the impact of their project, wherein people within this boundary were able to sell their house to the company, there is no boundary constructed for people who are impacted from a social perspective by the mine development.

The Roşia Montană gold mining project has sparked international media attention, with the opposition NGO campaign by Alburnus Maior ‘Save Roşia Montană’ receiving much of the media attention. Although the president of the NGO is Eugen David who lives in , Roşia Montană, the campaign leader is Stephanie Roth, a Swiss born national based in

London. As stated by Kapelus (2002), opposition at a global level to mines is not as credible as opposition that comes directly from a local community. The ability of NGO's to lead campaigns and create social movements against a mining project to prevent its development, will relate to in part to individual political economies and the dynamics of internal movements (Bebbington *et al*., 2008). The outcome of Roşia Montană is still unknown, although will undoubtedly reflect the extent of government support for the project (at local and national levels), in addition to the voice of the local people. This highlights the fact that mining operations really are tri-sector partnerships between business, civil society and government/intergovernmental organisations (Warhurst, 2001), where support from local people and the government are essential for the success of a project. The case study of Cotacachi, in Ecuador, where the copper mine failed to get support from the government (Bebbington *et al*., 2008), perhaps relates to issues of trying to open a mine in new territory, where there are fewer established mines. WP 3 deliverable 3.2 will use the findings of 97 surveys, 6 focus groups and 9 interviews carried out in Roşia Montană to present the views of a range of stakeholders on the proposed project. The issue remains, however, that sometimes the people who remain to be most impacted by a project (in a positive or negative sense, or potentially in both ways), are not always the stakeholder group with the loudest voice (or who have the greatest potential to influence a decision). Whitmore (2006) highlights the importance of free, prior and informed consent (FPIC) in any decision-making process, suggesting that a community should be heard if they say "no" to a project. Conversely, what should be done for communities like Roşia Montană, where initial observations are of a community that is saying "yes" to the mines reopening but remains tied to the decision making process within the government (RMGC started work in 1997 and they still lack the environmental permit necessary for work to commence). Conversely, what constitutes a community decision as suggested by Whitmore (2006)? A democratic vote from the whole community on? This then reverses back to the difficulty of defining what a community is.

4.3 Russia

There are major concerns of the impact on human health from the environmental pollution generated by industries in large towns and cities in Russia. Russia has the lowest life expectancy among all industrialised countries (Bobak *et al*., 1998). In many cases, the potential impacts on human health are far greater than in other western industrial countries, due to the proximity of industries in Russia to the towns and cities. The towns and cities grew around the industries, creating issues from the direct fallout of pollutants on the urbanised populations. Findings by Williamson *et al*. (2008), using lichen transplant methodologies, suggest that the smelter in Karabash creates a source of atmospheric pollution as far as 30 km from the smelter. In Magnitogorsk (also in the Southern Urals), the highest area of pollution is suggested to be around 3-5 km from the plant (Revich, 1992). Further studies highlight the potential for smelter emissions from Karabash to pose a severe risk to human health due to the high levels of bioavailable toxic metals in particulates from the smelter (Williamson *et al*., 2003). It is, however, probable that new technology implemented by Ausmelt Limited has reduced levels of pollution emitted from the smelter at Karabash. Despite these efforts the risks from past

environmental contamination remain ever present. Until there is a clean-up of the waste in Karabash created from the past mining in the area, the physical environment is still likely to affect the health of residents in the town.

4.4 Sweden, Kristineberg

The village of Kristineberg exists because of mining in the region. The community grew to provide people who worked at the mines houses to live in. There are environmental concerns in the area, such as Hornträsk Lake being highly acidic and one of the abandoned pits being used as a rubbish dump, although the main problems facing this community are relating to its very existence and ability to survive with a decreasing and ageing population structure. The research undertaken in Kristineberg will provide an assessment of how people think mining affects them from a social and environmental perspective, in addition to looking at to what extent people regard the issues created in a community life Kristineberg as being the responsibility of the mining company to sort out.

4.5 UK, Cornwall

Cornwall has a long history of mining, and similar to Roşia Montană, mining has not just benefitted the community economically, it has helped define its cultural identity. The china clay industry is still a relatively large employer within Cornwall, although there are no active metal mines in Cornwall at present. This could change over the next few years, as WUM attempt to reopen South Crofty. Although there is a difference in scale of the proposed projects at South Crofty and Roşia Montană, the interest lies in establishing the level of support that different stakeholder groups have for the proposed projects at both of the sites. This is especially true given the long history of mining at both of the sites that goes back thousands of years.

4.6 Summary of the socio-economic issues in all 7 demo sites across the 5 countries

The seven demo sites being used for the ImpactMin WP3 work are all unique, with different socio-economic and environmental challenges across each of the sites. The issues faced relate not only to the status of the mining in the area (e.g. active, inactive; mine site rehabilitated or not etc), but also to the general economic and political climate within the country and region and how this has created or solved problems that each of the sites have faced. The aforesaid sections of this report summarise the key challenges encountered at each of the demo sites relating to the status of the mine, and any associated environmental or socio-economic issues in the area, and also to the wider socio-economic climate of that particular region and country. There are distinct differences across the sites in terms of who is classifiable as a stakeholder and has been interviewed and the level of engagement of the mining company with different stakeholders.

Chapter 5 Future outlook

5.1 Future work - WP 3 report 3.2

Deliverable 3.2 will report the findings of the survey undertaken across the seven demo sites, with more in-depth information also included from the interviews and focus groups carried out of key stakeholders at each of the sites (refer to section 3 for lists on who was interviewed) across the sites. This work will help compare people's attitudes and levels of understanding of the mining industry across the different sites (and countries), providing information on how stakeholder groups interact with each other. Information from the interviews will reveal what the mining companies consider CSR to be and how they engage in it. Overall, the aim is to use the findings of this study to create a better understanding of the perceptions and attitudes of different stakeholder groups to mining in different countries that are at various stages in mining, where all of the sites face unique socio-economic and environmental challenges. The diverse range of case studies used in this study will help mining companies and governments ascertain how people will react to any future expansions in mining and how, by having an increased understanding of the issues people are affected by, policy can be created to maximise the benefits that mining can have on a community whilst minimising the negative impacts.

5.2 Difficulties encountered within the project work.

We have been fortunate within this project to work alongside very cooperative and efficient partners who have helped us undertake the work as effectively as possible within the timeframe of the project. One of the difficulties with the nature of social science research, however, is getting people to participate within the research, which as described by Denscombe (2002), that whilst cooperation is vital for social research, it should not be taken for granted and ultimately our responses across different sites reflects this. There was an evident difference in responses from people across the different demo sites (and therefore within countries) to being asked if they would take the time to complete a survey or participate in an interview or focus group. For example, in Sweden, we found that although we people were generally very receptive to being interviewed, we struggled to get people to complete the survey. It was similar in Russia, where people were quite suspicious about completing surveys even when it was explained to them that it was anonymous. In Karabash, attempts were made to get people to complete the survey and the next day when we went to collect 'completed' copies of the survey, it was evident that they had generated suspicion and uncompleted versions of the survey were returned to us. It was easier to obtain higher number of responses to the survey in Cornwall where we had a longer period of opportunity to get people to participate in the survey. This explains the higher number of responses obtained in Cornwall compared to the other demo sites. In Roşia Montană, in part due to the efficiency of our partners on the project, it was very easy to develop a schedule whereby we could interview or use focus groups to hear the views of wide range of stakeholders who had different opinions on the project. On return from Roşia Montană, an interview was carried out using Skype to Greenpeace Romania. After

correspondence with Stephanie Roth, the leader of the opposition NGO ‘Save Roşia Montană’, it was unfortunately not possible to arrange an interview with her.

One of the issues with arranging interviews at the Russian demo sites was that the ImpactMin project partners at the Institute of Mineralogy (IMIN) were based in Miass which is relatively close to Karabash but a long way away from Gay or Mednogorsk which are near the Kazakhstan border. This meant we were having to find people ‘blindly’ to interview with no prior knowledge, as we had in Cornwall, of suitable people to interview. Our colleagues from Miass did an excellent job of explaining the aims and objectives of the WP3 ImpactMin work to random people and thus enabling us to obtain interesting qualitative data. There is also an element, as noted above, of different cultures having different approaches to obtaining qualitative information (during the communist era in Russia or Romania it is likely that this work would have been very difficult to undertake). It was difficult to arrange to talk to the smelter and mining companies in Russia and therefore views from the company are represented by interviews with mayors in Karabash and Mednogorsk, who have direct contact with the companies. It was only in Mednogorsk that we were able to gain an invite by the smelter company to look round a smelter museum and this involved limited opportunity to ask questions to the company itself.

Another difficulty was encountered in finding the basic demographic information to use to create a socio-economic description for each of the sites. In Bosnia Herzegovina, for example, the last census data dated back to 1991. We came across similar problems in trying to obtain some of the regional data for Russia, for Gay and Mednogorsk in the Orenburg Oblast and Karabash in the Chelyabinsk Oblast. It is also hard to ascertain about the reliability of some of the sources of the data for these demo sites (and the same perhaps for data from Bosnia Herzegovina).

One of the most pronounced difficulties encountered in trying to undertake such an ambitious project across multiple countries, relates to language barriers and reliance on European partners to translate information on all aspects of the project (e.g. designing the survey, interviewing people, interpreting the surveys, explaining things to people to enable them to fully understand how their participation in the project would be used). We were fortunate across all of the sites to work with people who had an excellent understanding of English, facilitating good translation services throughout all aspects of the project.

The final aspect to be discussed is the task of undertaking the work across all five of the demo sites (including Cornwall) within a very short space of time. I started work on the project in March and by September I had undertaken all of the research trips. This included becoming acquainted with the different demo sites, planning the research, liaising with partners (including organising a workshop In Cornwall to get feedback from the partners on how we should undertake the research) and carrying out the research itself. Undertaking this amount of research and organising the four trips away in six months was challenging.

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Appendix 1 Photographs of the demo site, Vihovići, in Bosnia Herzegovina

Figure 19 Photograph of the derelict mine shaft at Vihovići. This site is not fenced of and is surrounded by residential and commercial buildings.

Figure 20 Photograph of a small scale bauxite mine near Čitluk (approximately 20 km from Mostar)

Figure 21 Photograph of a bombed building in Mostar. This building represents many of its kind that are a legacy of the damage inflicted by the war that lasted from 1992-1995.

Appendix 2 Photographs of the demo site, Roşia Montană, in Romania

Figure 22 Photograph of Roşia Montană village.

Figure 23 Photograph of Roşia Montană pit from the former state owned mines.

Figure 24 Photograph of the tailings dam at Roşia Montană.

Figure 25 Photograph of the 'resettled community' in Alba Iulia. The houses have been built by Roşia Montană Gold Corporation to compensate for the houses they have bought of residents in Roşia Montană.

Appendix 3 Photographs of the demo sites in Russia

Figure 26 Photograph of acidic lake created from the sulfide bearing waste deposits from the mines near Gay.

Figure 27 Photograph of a tailings dam near Gay.

Figure 28 Photograph of fieldwork being carried out in Gay.

Figure 29 Photograph of a Slag heap near Karabash.

Figure 30 Photograph of acid mine drainage near Karabash. The lack of vegetation is evident in the background of this picture. This site was densely vegetated prior to the smelter opening.

Figure 31 Photograph of the new church in Karabash funded entirely by the Russian Copper Company (who own Karabash Smelter).

Figure 32 Photograph of an Interview being carried out with the Mayor of Karabash.

Figure 33 Photograph of Mednogorsk smelter museum.

Appendix 4 Photographs of the demo site, Kristineberg, in Sweden

Figure 34 Photograph of Kristineberg mine which is operated by Boliden in Vasterbotten County, Sweden.

Figure 35 Photograph of Reindeer herds near Malå in Vasterbotten County.

Figure 36 Photograph of a focus group carried out with 3 people from the Malå Sami community.

Figure 37 Photograph of a map of the reindeer herding grounds in Vasterbotten County. The blue area shows where the reindeer are in the summer months and the green area is where they go in the winter months.

Appendix 5 Photographs of the demo site, Cornwall, in the UK

Figure 38 Photograph of the 'Cornish Alps'. Waste dumps from China Clay mining.

Figure 39 Photograph of Little John's pit, in the Clay Lands, St Austell.

Figure 40 Photograph of the Eden Project, set in a former china clay pit, now a tourist attraction which

Figure 41 Photograph of Geevor Tin Mine Museum. One of many mining heritage attractions in Cornwall. Cornwall gained World Heritage Status for its mining landscape in 2006.

Appendix 6 Surveys
Bosnia and Herzegovina Survey

Welcome
Welcome to the ImpactMin mining survey. This European-wide survey aims to capture your views on mining. This survey is part of a European funded project, ImpactMin, looking at people's perceptions and understanding of the mining and extractive industry. The survey is being run by independent researchers at the University of Exeter (UK) and collaborating Institutions across Europe and Russia, including the University of Mostar. We are comparing the experiences of people in the UK with sites across Romania, Bosnia and Herzegovina, Sweden and Russia.

The survey is completed anonymously and no one can identify who has responded to the survey, so please feel free to answer the questions honestly. The survey will take around 15 to 20 minutes to complete.

Thank you for taking the time to complete this survey. Your views are very important to understanding people's perception of mining.

Data Protection
All data collected in this survey will be held anonymously and securely.

Section 1: Information about you

1. Are you male or female? ☐ Male ☐ Female
2. What is your age? ☐ Under 18 ☐ 18 - 21 ☐ 21 - 30 ☐ 31 - 40 ☐ 41 - 50 ☐ 51 - 60 ☐ 61 or over
3. What is the highest level of education that you have completed at present?
   - ☐ Compulsory education completed (aged 15 years)
   - ☐ Post compulsory education to 18/19 years
   - ☐ Trade (secondary school – 3 years)
   - ☐ Gymnasium/technical/vocational training (secondary – 4 years)
   - ☐ Degree level
   - ☐ Post graduate degree level
   - ☐ Other *(please specify)*:
4. What is your total household income? ☐ < 10,000 KM ☐ 10,000 - 24,999 KM ☐ 25,000 - 39,999 KM ☐ 40,000 - 59,999 KM ☐ 60,000 - 79,999 KM ☐ 80,000 KM

5. How many people including yourself are there in your household?

6. What is your occupation (if you are currently unemployed or retired please state this as well)?

7. Is your occupation linked in any way to the mining industry?

☐ Yes ☐ No ☐ I don't know

If you do think your occupation is linked to the mining industry, how is it linked?

8. Where do you live? ☐ Mostar ☐ Other *(please specify):*

9. Select the stakeholder group to which you belong. You may feel you belong in more than 1 group and if this is the case please select the 2 main groups.

☐ Local community ☐ Mining company ☐ None

☐ Mining service company ☐ Government body ☐ The media

☐ NGOs (non-governmental organisation or voluntary organisation)

☐ Academic ☐ Other *(please specify):*

Section 2: Understanding of the mining industry

10. From whom do you get your information on mining? Select your top 2 sources.

☐ Mining company ☐ Government/Council

☐ News organisations or the media ☐ NGOs (non-governmental organisation or voluntary organisation) ☐ Local community groups

☐ Neighbours/family/friends ☐ Other *(please specify):*

11. How do you get most of your information about mining? Select your top 2 sources.

☐ Internet ☐ Newspapers ☐ Magazines ☐ Leaflets

☐ Public consultation events ☐ Face to face discussions ☐ TV/radio
☐ Other *(please specify)*:

12. How do you feel about mining in general?

☐ Positive ☐ Neutral ☐ Negative ☐ I don't know
☐ Both positive and negative

Why do you feel this way?

Section 3: Mining in Bosnia and Herzegovina

13. If known, how far do you live from an active or inactive mine site? Please provide an approximate distance in km. If known, please name your local mining company?

14. What is the significance of mining in the Mostar region in the past, at the present and in the future? Please tick the boxes that apply.

	Significant	Not significant	I don't know
Past			
Present			
Future			

15. What have been the major benefits to the Mostar region from the presence of the mining industry?

16. If some kind of development is inevitable in your area, indicate your level of preference, compared to a new mine development, from the following options: Tick whether you think the option is more or less preferable compared to a mine being developed in your area.

Option	More preferable than a mine	The same preference as a mine	Less preferable than a mine	I don't know
Waste incinerator				
Factory				
Amusement park				
Wind farm				
Prison				
School				
Eco-town development				
Hospital				
Power station				
Landfill site				

17. Mining in the Mostar region - Please classify the following environmental impacts relating to past mining (using a tick or mark in the correct box).

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Visual intrusion					
Land contamination					
Water contamination					
Air quality					
Land					

instability					
Noise					
Dust					
Damage to nature					
Traffic					

18. Please rank your top 3 concerns from the above list (visual intrusion, land contamination, water contamination, air quality, land instability, noise, dust, damage to nature and traffic) if new mining started in your area?

19. Please classify the following impacts of past mining in the Mostar region (using a tick or mark in the correct box).

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Workforce health and safety					
Community health and safety					
Job dependency (reliance on mining for employment that may lead to unemployment when the mines					

close)					
Lack of aspiration					
Poor education/training attainment					
Crime and antisocial behaviour					
Ageing population					
Family breakdown					
Poor housing					

20. Please rank your top 3 concerns from the above list (workforce health and safety, community health and safety, job dependency, lack of aspiration, poor education/training, crime and antisocial behaviour, ageing population, family breakdown, poor housing) if new mining started in your area?

21. How would you feel if mines expanded in the Mostar region or if the Vihovići mine site reopened? Please explain your answer relating to how you think the former mine site at Vihovići should be developed?

22. In your area, please indicate how the mining industry is performing relating to the following factors?

	Improving	No change	Deteriorating	I don't know
Education and training opportunities				
Local community participation				
Reducing pollution				
Restoring vegetation				
Meeting public expectations				
Workplace health and safety				
Community health and safety				
Local employment				
Community resources				
Aiding the public understanding				

of mining				
Improving housing				

23. What (in your area) should mining companies do in order to avoid negative impacts and improve positive impacts?

24. With respect to the Mostar region (tick what applies):

	Yes	No	I don't know
Have you or any members of your family been employed in the mining industry?			
Do you think mining is an important part of Mostar's cultural identity/heritage/tradition?			
Do you think mining is an important part of Mostar's future?			
Would you like more information on the environmental impacts of mining?			

25. Do you think the local community is sufficiently engaged by the government/mining companies regarding the development of existing mines and new mines, and the development of former mine sites?

☐ Yes ☐ No ☐ don't know

26. Is there anything that you would like local mining companies to do for communities in the region of Mostar?

27. How does the local mining company consult with you? Select what applies to you.

- ☐ No consultation
- ☐ Face to face discussions
- ☐ Phone survey
- ☐ Public meeting
- ☐ Internet survey
- ☐ Postal survey
- ☐ Face to face survey
- ☐ Public display
- ☐ Leaflets
- ☐ Not applicable – (no local mining)
- ☐ Other *(please specify):*

28. What would be the most useful form of consultation for you with a mining company working/planning to work in your area? Please select the 2 most useful forms of consultation:

- ☐ Face to face discussions
- ☐ Phone survey
- ☐ Public meeting
- ☐ Internet survey
- ☐ Postal survey
- ☐ Face to face survey
- ☐ Public display
- ☐ Leaflets
- ☐ Other *(please specify):*

Section 4: Final question

29. Please comment on any of your responses to this survey that you feel particularly strongly about.

Roşia Montană Survey

Welcome

Welcome to the ImpactMin mining survey. This European-wide survey aims to capture your views on mining. This survey is part of a European funded project, ImpactMin, looking at people's perceptions and understanding of the mining and extractive industry. The survey is being run by independent researchers at The University of Exeter and collaborating Institutions. We are comparing the experiences of people in the UK with sites across Romania, Bosnia and Herzegovina, Sweden and Russia.

The survey is completed anonymously and no one can identify who has responded to the survey, so please feel free to answer the questions honestly. The survey will take around 20 minutes to compete. This survey will form part of the research project described above.

Thank you for taking the time to complete this survey. Your views are very important to the results of this project.

Data Protection

All data collected in this survey will be held anonymously and securely.

Section 1: Information about you

For the purpose of the research we are undertaking it is important we know certain details about you and your background.

1. Are you male or female? ○ Male ○ Female
2. What is your age? ○ Under 18 ○ 18 - 21 ○ 21 - 30 ○ 31 - 40 ○ 41 - 50 ○ 51 - 60 ○ 61 or over
3. What is the highest level of education that you have completed at present?
   - ○ The compulsory education (8 classes).
   - ○ Education expanded after the compulsory education up to 18 years (or equivalent School)
   - ○ Education commercial /technical/professional
   - ○ University education
   - ○ Education post University
   - ○ Another (please indicate the type of education exempted).
4. What is your total household income? ○ < 400 lei/family member ○ 400 – 800 lei/family member ○ > 800 lei/family member or more

5. What is your current occupation (if you are currently unemployed or retired please state this)?

6. Do you think your occupation is linked in any way to the mining industry?

○ Yes ○ No ○ I don't know

If you do think your occupation is linked to the mining industry, how is it linked?

7. How long have you lived in Roşia Montană?

○ Less than 1 year ○ 1 - 5 years ○ 6 - 10 years ○ 11 - 15 years

○ More than 16 years ○ All my life ○ I don't live in Roşia Montană and have never done so

○ Other *(please specify)*:

If you do not live in Roşia Montană, where do you live?

8. Select the stakeholder group to which you belong. You may feel you belong in more than 1 group and if this is the case please select the 2 main groups.

☐ Mining company ☐ Mining service company ☐ Government body

☐ NGOs (non-governmental organisation or voluntary organisation)

☐ Local community group ☐ Academic ☐ The media

☐ Other *(please specify):*

Section 2: Understanding of the mining industry

This section explores what the mining industry means to you.

9. If everything we use is either grown or mined, please list up to 5 mined products that you have used today?

10. From whom do you get your information on mining? Select your top 2 sources.

☐ Mining company ☐ Government/council

☐ News organisations or the media

☐ NGOs (non-governmental organisation or voluntary organisation)

☐ Local community groups ☐ Neighbours/family/friends

☐ Other *(please specify)*

11. How do you get most of your information about mining? Select your top 2 sources.

☐ Internet ☐ Newspapers ☐ Magazines ☐ Leaflets
☐ Public consultation events ☐ Face to face discussions ☐ TV/radio
☐ Other *(please specify)*:

12. How do you feel about mining in general?

○ Positive ○ Neutral ○ Negative ○ I don't know ○ Both positive and negative

Why do you feel this way?

13. Please classify the following major land uses according to the scale of their negative impacts (1 being the most severe impact and 5 the least severe). Tick the box where you think the impact is.

		1	2	3	4	5
		Most severe	Severe	Moderate	Not as severe	Least severe
A	Agriculture					
B	Transport Infrastructure (roads, railway, airports)					
C	Forestry					
D	Mining					
E	Urban Development					
F	Industrial Development					

Section 3: Mining in Roşia Montană

14. How far do you live from an active or inactive mine site? Please provide an approximate distance in km. If known, please name your local mining company?

15. What is the current phase of the mining industry in your area (select one)?

○ Exploration ○ Mine construction ○ Extraction ○ Closing
○ Post-mining ○ A combination of the above

16. What is the significance of mining to your area in the past, at the present and in the future? Please tick the boxes that apply.

	Significant	Not significant	I don't know
Past			
Present			
Future			

17. What have been the major benefits to your area from the presence of the mining industry?

18. If some kind of development is inevitable in your area, indicate your level of preference, compared to a new mine development, from the following options: Tick whether you think the option is more or less preferable compared to a mine being developed in your area.

Option	More preferable than a mine	The same preference as a mine	Less preferable than a mine	I don't know
Waster incinerator				
Factory				
Amusement park				
Wind farm				
Prison				
School				
Hospital				
Power station				
Landfill site				

19. Mining in Roşia Montană - Please classify the following environmental impacts in your area relating to mining (using a tick or mark in the correct box). One is the most severe impact and 5 is the least. If you do not know or feel that there has been no environmental impact please select the box stating no impact or I don't know.

	1	2	3	4	5		
	Most severe	Severe	Moderate	Not as severe	Least severe	No Impact	I don't know
Visual intrusion							
Land contamination							
Water							

contamination							
Air quality							
Land instability							
Noise							
Dust							
Damage to nature							
Traffic							

20. Please rank your top 3 concerns from the above list (visual intrusion, land contamination, water contamination, air quality, land instability, noise, dust, damage to nature and traffic) if new mining started in your area?

21. Mining in Roşia Montană - Please classify from 1 to 5 the following negative socio-economic impacts in your area relating to past mining (using a tick or mark in the correct box). 1 is the most severe impact and 5 is the least. If you do not know or feel that there has been no environmental impact please select the box stating no impact or I don't know.

	1	2	3	4	5		
	Most severe	Severe	Moderate	Not as severe	Least severe	No Impact	I don't know
Workforce health and safety							
Community health and safety							
Job dependency (reliance on mining for employment that may lead to unemployment when the mines close)							
Lack of aspiration							

Poor education/training attainment							
Crime and antisocial behaviour							
Ageing population							
Family breakdown							
Poor housing							

22. Please rank your top 3 concerns from the above list (work force health and safety, community health and safety, job dependency, lack of aspiration, poor education/training, crime and antisocial behaviour, ageing population, family breakdown, poor housing) if new mining started in your area?

23. Why do you think reopening the mine in Roşia Montană is so controversial?

24. In your area, please indicate how the mining industry is performing relating to the following factors? Select one box per factor by ticking what applies.

	Improving	No impact	Deteriorating	I don't know

Education and training opportunities				
Local community participation				
Reducing pollution				
Restoring vegetation				
Meeting public expectations				
Workplace health and safety				
Community health and safety				
Local employment				
Community resources				
Aiding the public understanding of mining				
Improving housing				

25. What in your area should mining companies do in order to avoid negative impacts and improve positive impacts?

26. With respect to Roşia Montană (tick what applies):

	Yes	No	I don't know
Have you or any members of your family been employed in the mining industry?			
Do you think mining is an important part of Roşia Montană's cultural identity/heritage/tradition?			

Do you think mining is an important part of Roşia Montană'sfuture?			
Would you like more information on the environmental impacts of mining?			

27. Do you think the local community is sufficiently engaged by the government/mining companies regarding the mine development?

○ Yes ○ No ○ I don't know

28. Is there anything that you would like the mining company to do for this community?

29. How does the local mining company consult with you? Select what applies to you.

☐ No consultation ☐ Face to face discussions ☐ Phone survey
☐ Public meeting ☐ Internet survey ☐ Postal survey
☐ Face to face survey ☐ Public display ☐ Leaflets
☐ Other *(please specify):*

What would be the most useful form of consultation for you with a mining company working/planning to work in your area? Please select the 2 most useful forms of consultation:

☐ Face to face discussions ☐ Phone survey ☐ Public meeting
☐ Internet survey ☐ Postal survey ☐ Face to face survey
☐ Public display ☐ Leaflets

Section 4: Final question

30. Please comment on any of your responses to this survey that you feel particularly strongly about.

Russia, Gay survey

Welcome

Welcome to the ImpactMin mining survey. This survey aims to capture your views on mining. This survey is part of a European funded project, ImpactMin, looking at people's perceptions and understanding of the mining industry. The survey is being run by independent researchers at the University of Exeter (UK) and collaborating Institutions. We are comparing the experiences of people in the Cornwall with sites across Romania, Bosnia and Herzegovina, Sweden and Russia.

The survey is completed anonymously and no one can identify who has responded to the survey, so please feel free to answer the questions honestly. The survey will take around 20 minutes to compete.

Thank you for taking the time to complete this survey. Your views are very important to understanding people's perception of mining.

Data Protection

All data collected in this survey will be held anonymously and securely.

Section 1: Information about you

1. Are you male or female ☐ Male ☐ Female
2. What is your age? ☐ Under 18 ☐ 18 - 21 ☐ 21 - 30 ☐ 31 - 40 ☐ 41 - 50 ☐ 51 - 60 ☐ 61 or over
3. What is the highest level of education that you have completed at present?
   - ☐ Secondary (Compulsory education completed (aged 16 years, school))
   - ☐ Secondary special education (Trade/technical/vocational training)
   - ☐ Higher Education (University)
   - ☐ Other *(please specify)*:
4. What is your total household income (per month)? ☐ < 5,000 RUB ☐ 5,000 – 15,000RUB ☐ 15,000 - 25,000 RUB ☐ 25,000 or more
5. Number of people in the family living with you?
6. What is your occupation (if you are currently unemployed or retired please state this as well)?
7. Is your occupation linked in any way to the mining industry?

☐ Yes ☐ No ☐ I don't know

If you do think your occupation is linked to the mining industry, how is it linked?

8. How long have you lived in Gay?

☐ Less than 1 year ☐ 1 - 5 years ☐ 6 - 10 years
☐ 11 - 15 years ☐ More than 16 years ☐ All my life
☐ I don't live in Gay and have never done so ☐ Other *(please specify)*:

If you do not live in Gay, where do you live?

9. Select the group to which you belong or identify most with. You may feel you belong in more than 1 group and if this is the case please select the 2 main groups.

☐ Local community ☐ Mining company
☐ Mining service company ☐ Government body ☐ The media
☐ NGOs (non-governmental organisation or voluntary organisation)
☐ Academic ☐ None ☐ Other *(please specify):*

Section 2: Understanding of the mining industry

10. From whom do you get your information on mining? Select your top 2 sources.

☐ Mining company ☐ Government/Council
☐ News organisations or the media ☐ I do not get information
☐ NGOs (non-governmental organisation or voluntary organisation)
☐ Local community groups ☐ Neighbours/family/friends
☐ Other *(please specify)*

11. How do you get most of your information about mining? Select your top 2 sources.

☐ Internet ☐ Newspapers ☐ Magazines ☐ Leaflets
☐ Public consultation events ☐ Face to face discussions ☐ TV/radio
☐ I do not get information ☐ Other *(please specify)*:

12. How do you feel about mining in general?

☐ Positive ☐ Neutral ☐ Negative ☐ I don't

☐ Both positive and negative

Why do you feel this way?

Section 3: Mining in your region

13. How far do you live from an active or inactive mine site? Please provide an approximate distance in km. If known, please name your local mining company?

14. What is the significance of mining in Gay in the past, at the present and in the future? Please tick the boxes that apply.

	Significant	Not significant	I don't know
Past			
Present			
Future			

15. What have been the major benefits in Gay from the presence of the mining industry?

16. If some kind of development were to occur in your area, indicate your level of preference, compared to a new mine development, from the following options: Tick whether you think the option is more or less preferable compared to a mine being developed in your area.

Option	More preferable than a mine	The same preference as a mine	Less preferable than a mine	I don't know
Waster incinerator				
Factory				
Amusement park				
Wind farm				
Prison				

School				
Town development				
Hospital				
Power station				
Landfill site				

17. Relating to mining in Gay - please classify the following environmental impacts using a tick or mark in the correct box.

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Visual intrusion					
Land contamination					
Water contamination					
Air quality					
Land instability					
Noise					
Dust					
Damage to nature					
Traffic					

18. Please rank your top 3 concerns from the above list (visual intrusion, land contamination, water contamination, air quality, land instability, noise, dust, damage to nature and traffic) if new mining started in your area?

19. Please classify the following impacts of past mining in Gay (using a tick or mark in the correct box).

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Workforce health and safety					
Community health					

and safety					
Job dependency (reliance on mining for employment that may lead to unemployment when the mines close)					
Lack of aspiration					
Poor education/training attainment					
Crime and antisocial behaviour					
Ageing population					
Family breakdown					
Poor housing					

20. Please rank your top 3 concerns from the above list (workforce health and safety, community health and safety, job dependency, lack of aspiration, poor education/training, crime and antisocial behaviour, ageing population, family breakdown, poor housing) if new mining started in your area?

21. How would you feel if mining expanded in Gay?

22. In your area, please indicate how the mining industry is performing relating to the following factors?

	Improving	No change	Deteriorating	I don't know
Education and training				

opportunities				
Local community participation				
Reducing pollution				
Restoring vegetation				
Meeting public expectations				
Workplace health and safety				
Community health and safety				
Local employment				
Community resources				
Aiding the public understanding of mining				
Improving housing				

23. What in your area should mining companies do in order to avoid negative impacts and improve positive impacts?

24. With respect to Gay (tick what applies):

	Yes	No	I don't know
Have you or any members of your family been employed in mining?			
Do you think mining is an important part of Gay's cultural			

identity/heritage/tradition?			
Do you think mining is an important part of Gay's future?			
Would you like more information on the environmental impacts of mining?			

25. Do you think the local community is sufficiently engaged by the government/mining companies regarding the development of existing and new mines?

☐ Yes ☐ No ☐ I don't know

26. Is there anything that you would like the mining company to do for communities in Gay?

27. How does the local mining company (the Ural Mining and Metallurgical Company) consult with you? Select what applies to you.

☐ No consultation ☐ Face to face discussions ☐ Phone survey
☐ Public meeting ☐ Internet survey ☐ Postal survey
☐ Face to face survey ☐ Public display ☐ Leaflets
☐ Other *(please specify):*

28. What would be the most useful form of consultation for you with a mining company working/planning to work in your area? Please select the 2 most useful forms of consultation:

☐ Face to face discussions ☐ Phone survey ☐ Public meeting
☐ Internet survey ☐ Postal survey ☐ Face to face survey
☐ Public display ☐ Leaflets

Section 4: Final question

29. Please comment on any of your responses to this survey that you feel particularly strongly about.

Russia, Karabash Survey

Welcome

Welcome to the ImpactMin mining survey. This survey aims to capture your views on mining. This survey is part of a European funded project, ImpactMin, looking at people's perceptions and understanding of the mining industry. The survey is being run by independent researchers at the University of Exeter (UK) and collaborating Institutions. We are comparing the experiences of people in the Cornwall with sites across Romania, Bosnia and Herzegovina, Sweden and Russia.

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Thank you for taking the time to complete this survey. Your views are very important to understanding people's perception of mining.

Data Protection

All data collected in this survey will be held anonymously and securely.

Section 1: Information about you

1. Are you male or female? ☐ Male ☐ Female
2. What is your age? ☐ Under 18 ☐ 18 - 21 ☐ 21 - 30 ☐ 31 - ☐ 41 - 50 ☐ 51 - 60 ☐ 61 or over
3. What is the highest level of education that you have completed at present?
   - ☐ Secondary (Compulsory education completed (aged 16 years, school))
   - ☐ Secondary special education (Trade/technical/vocational training)
   - ☐ Higher Education (University
   - ☐ Other *(please specify)*:
4. What is your total household income (per month)? ☐ < 5,000 RUB ☐ 5,000 – 15,000RUB ☐ 15,000 - 25,000 RUB ☐ 25,000 or more
5. Number of people in the family living with you?
6. What is your occupation (if you are currently unemployed or retired please state this as well)?
7. Is your occupation linked in any way to the mining or smelting industry?

☐ Yes ☐ No ☐ I don't know

If you do think your occupation is linked to the mining industry, how is it linked?

8. How long have you lived in Karabash?

☐ Less than 1 year ☐ 1 - 5 years ☐ 6 - 10 years ☐ 11 – 15

☐ More than 16 years ☐ All my life

☐ I don't live in Karabash and have never done so

☐ Other *(please specify)*:

If you do not live in Karabash, where do you live?

9. Select the group to which you belong or identify most with. You may feel you belong in more than 1 group and if this is the case please select the 2 main groups.

☐ Local community ☐ Mining company

☐ Mining service company ☐ Government body ☐ The media

☐ NGOs (non-governmental organisation or voluntary organisation)

☐ Academic ☐ None ☐ Other *(please specify):*

Section 2: Understanding of the mining industry

10. From whom do you get your information on mining? Select your top 2 sources.

☐ Mining company ☐ Government/Council

☐ News organisations or the media ☐ I do not get information

☐ NGOs (non-governmental organisation or voluntary organisation)

☐ Local community groups ☐ Neighbours/family/friends

☐ Other *(please specify)*

11. How do you get most of your information about mining? Select your top 2 sources.

☐ Internet ☐ Newspapers ☐ Magazines ☐ Leaflets

☐ Public consultation events ☐ Face to face discussions ☐ TV/radio

☐ I do not get information ☐ Other *(please specify)*:

12. How do you feel about mining in general?

☐ Positive ☐ Neutral ☐ Negative ☐ I don't know

☐ Both positive and negative

Why do you feel this way?

Section 3: Mining in Russia

13. How far do you live from an active or inactive mine site? Please provide an approximate distance in km. If known, please name your local mining company?

14. What is the significance of mining in your region in the past, at the present and in the future? Please tick the boxes that apply.

	Significant	Not significant	I don't know
Past			
Present			
Future			

15. What have been the major benefits to Karabash from the presence of the smelter industry?

16. If some kind of development is inevitable in your area, indicate your level of preference, compared to a new mine development, from the following options: Tick whether you think the option is more or less preferable compared to a mine being developed in your area.

Option	More preferable than a mine	The same preference as a mine	Less preferable than a mine	I don't know
Waster incinerator				
Factory				
Amusement park				
Wind farm				
Prison				
School				
Town development				
Hospital				
Power station				
Landfill site				

17. Relating to the smelter in Karabash - please classify the following environmental impacts using a tick or mark in the correct box.

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Visual intrusion					
Land contamination					
Water contamination					
Air quality					
Land instability					
Noise					
Dust					
Damage to					

nature					
Traffic					

18. Please rank your top 3 concerns from the above list (visual intrusion, land contamination, water contamination, air quality, land instability, noise, dust, damage to nature and traffic) if new mining started in your area?

19. Please classify the following impacts of the smelter in Karabash (using a tick or mark in the correct box).

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Workforce health and safety					
Community health and safety					
Job dependency (reliance on mining for employment that may lead to unemployment when the mines close)					
Lack of aspiration					
Poor education/training attainment					
Crime and antisocial behaviour					
Ageing population					
Family breakdown					
Poor housing					

20. Please rank your top 3 concerns from the above list (workforce health and safety, community health and safety, job dependency, lack of aspiration, poor education/training, crime and antisocial behaviour, ageing population, family breakdown, poor housing) if new mining started in your area?

21. How would you feel if mines expanded or reopened in your area?

22. In your area, please indicate how the smelter industry is performing relating to the following factors?

	Improving	No change	Deteriorating	I don't know
Education and training opportunities				
Local community participation				
Reducing pollution				
Restoring vegetation				
Meeting public expectations				
Workplace health and safety				
Community health and safety				
Local employment				
Community resources				
Aiding the public understanding of the minerals industry				
Improving housing				

23. What in Karabash should the smelter company do in order to avoid negative impacts and improve positive impacts?

24. With respect to Karabash (tick what applies):

	Yes	No	I don't know
Have you or any members of your family been employed at the smelter?			
Do you think mining is an important part of your regions cultural identity / heritage / tradition?			
Do you think mining is an important part of your regions future?			
Would you like more information on the environmental impacts of the smelter?			

25. Do you think the local community is sufficiently engaged by the government/the smelter company regarding the development of new industry?

☐ Yes ☐ No ☐ I don't know

26. Is there anything that you would like the smelter company to do for communities in Karabash?

27. How does the local smelter company (the Russian Copper Company) consult with you? Select what applies to you.

☐ No consultation ☐ Face to face discussions ☐ Phone survey
☐ Public meeting ☐ Internet survey ☐ Postal survey
☐ Face to face survey ☐ Public display ☐ Leaflets
☐ Other *(please specify):*

28. What would be the most useful form of consultation for you with a mining/smelter company working/planning to work in your area? Please select the 2 most useful forms of consultation:

- ☐ Face to face discussions
- ☐ Phone survey
- ☐ Public meeting
- ☐ Internet survey
- ☐ Postal survey
- ☐ Face to face survey
- ☐ Public display
- ☐ Leaflets

Section 4: Final question

29. Please comment on any of your responses to this survey that you feel particularly strongly about.

Russia, Mednogorsk Survey

Welcome

Welcome to the ImpactMin mining survey. This survey aims to capture your views on mining. This survey is part of a European funded project, ImpactMin, looking at people's perceptions and understanding of the mining industry. The survey is being run by independent researchers at the University of Exeter (UK) and collaborating Institutions. We are comparing the experiences of people in the Cornwall with sites across Romania, Bosnia and Herzegovina, Sweden and Russia.

The survey is completed anonymously and no one can identify who has responded to the survey, so please feel free to answer the questions honestly. The survey will take around 20 minutes to compete.

Thank you for taking the time to complete this survey. Your views are very important to understanding people's perception of mining.

Data Protection

All data collected in this survey will be held anonymously and securely.

Section 1: Information about you

1. Are you male or female? ☐ Male ☐ Female

2. What is your age? ☑ Under 18 ☐ 18 - 21 ☐ 21 - 30 ☐ 31 - 40 ☐ 41 - 50 ☐ 51 - 60 ☐ 61 or over

3. What is the highest level of education that you have completed at present?

- ☐ Secondary (Compulsory education completed (aged 16 years, school))
- ☐ Secondary special education (Trade/technical/vocational training)
- ☐ Higher Education (University
- ☐ Other *(please specify)*:

4. What is your total household income (per month)? ☐ < 5,000 RUB ☐ 5,000 – 15,000RUB ☐ 15,000 - 25,000 RUB ☐ 25,000 or more

5. Number of people in the family living with you?

6. What is your occupation (if you are currently unemployed or retired please state this as well)?

7. Is your occupation linked in any way to the mining or metal processing industry?

☐ Yes ☐ No ☐ I don't know

If you do think your occupation is linked to the mining industry, how is it linked?

8. How long have you lived in Mednogorsk?

☐ Less than 1 year ☐ 1 - 5 years ☐ 6 - 10 years ☐ 11 - 15 years

☐ More than 16 years ☐ All my life

☐ I don't live in Mednogorsk and have never done so

☐ Other *(please specify)*:

If you do not live in Mednogorsk, where do you live?

9. Select the group to which you belong or identify most with. You may feel you belong in more than 1 group and if this is the case please select the 2 main groups.

☐ Local community ☐ Mining company

☐ Mining service company ☐ Government body ☐ The media

☐ NGOs (non-governmental organisation or voluntary organisation)

☐ Academic ☐ None ☐ Other *(please specify):*

Section 2: Understanding of the mining industry

10. From whom do you get your information on mining? Select your top 2 sources.

☐ Mining company ☐ Government/Council

☐ News organisations or the media ☐ I do not get information

☐ NGOs (non-governmental organisation or voluntary organisation)

☐ Local community groups ☐ Neighbours/family/friends

☐ Other *(please specify)*

11. How do you get most of your information about mining? Select your top 2 sources.

☐ Internet ☐ Newspapers ☐ Magazines ☐ Leaflets

☐ Public consultation events ☐ Face to face discussions ☐ TV/radio

☐ I do not get information ☐ Other *(please specify)*:

12. How do you feel about mining in general?

☐ Positive ☐ Neutral ☐ Negative ☐ I don't know

☐ Both positive and negative

Why do you feel this way?

Section 3: Mining in your region

13. How far do you live from an active or inactive mine site? Please provide an approximate distance in km. If known, please name your local mining company?

14. What is the significance of mining in your region in the past, at the present and in the future? Please tick the boxes that apply.

	Significant	Not significant	I don't know
Past			
Present			
Future			

15. What have been the major benefits to Mednogorsk from the presence of the metal processing industry?

16. If some kind of development is were to occur in your area, indicate your level of preference, compared to a new mine development, from the following options: Tick whether you think the option is more or less preferable compared to a mine being developed in your area.

Option	More preferable than a mine	The same preference as a mine	Less preferable than a mine	I don't know
Waster incinerator				
Factory				
Amusement park				
Wind farm				
Prison				
School				
Town development				
Hospital				
Power station				
Landfill site				

17. Relating to the copper sulphate plant in Mednogorsk - please classify the following environmental impacts using a tick or mark in the correct box.

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Visual intrusion					
Land contamination					
Water contamination					
Air quality					
Land instability					
Noise					
Dust					
Damage to nature					

Traffic					

18. Please rank your top 3 concerns from the above list (visual intrusion, land contamination, water contamination, air quality, land instability, noise, dust, damage to nature and traffic) if new mining started in your area?

19. Please classify the following impacts of the copper sulphate plant in Mednogorsk (using a tick or mark in the correct box).

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Workforce health and safety					
Community health and safety					
Job dependency (reliance on mining for employment that may lead to unemployment when the mines close)					
Lack of aspiration					
Poor education/training					

attainment					
Crime and antisocial behaviour					
Ageing population					
Family breakdown					
Poor housing					

20. Please rank your top 3 concerns from the above list (workforce health and safety, community health and safety, job dependency, lack of aspiration, poor education/training, crime and antisocial behaviour, ageing population, family breakdown, poor housing) if new mining started in your area?

21. How would you feel if mines expanded or reopened in your area?

22. In your area, please indicate how the metal processing industry is performing relating to the following factors?

	Improving	No change	Deteriorating	I don't know
Education and training opportunities				
Local community participation				
Reducing pollution				
Restoring vegetation				
Meeting public expectations				
Workplace health and				

safety				
Community health and safety				
Local employment				
Community resources				
Aiding the public understanding of the minerals industry				
Improving housing				

23. What in your area should mining and related metal processing companies do in order to avoid negative impacts and improve positive impacts?

24. With respect to Mednogorsk (tick what applies):

	Yes	No	I don't know
Have you or any members of your family been employed at the copper sulphate plant?			
Do you think mining is an important part of your regions cultural identity/heritage/tradition?			
Do you think mining is an important part of your regions future?			
Would you like more information on the environmental impacts of mining and related industries such as metal processing plants?			

25. Do you think the local community is sufficiently engaged by the government/mining companies regarding the development of existing and new mines?

☐ Yes ☐ No ☐ I don't know

26. Is there anything that you would like the copper sulphate company to do for communities in Mednogorsk?

27. How does the copper sulphate company (the Ural Mining and Metallurgical Company) consult with you? Select what applies to you.

☐ No consultation ☐ Face to face discussions ☐ Phone survey
☐ Public meeting ☐ Internet survey ☐ Postal survey
☐ Face to face survey ☐ Public display ☐ Leaflets
☐ Other *(please specify):*

28. What would be the most useful form of consultation for you with a mining/smelter company working/planning to work in your area? Please select the 2 most useful forms of consultation:

☐ Face to face discussions ☐ Phone survey ☐ Public meeting
☐ Internet survey ☐ Postal survey ☐ Face to face survey
☐ Public display ☐ Leaflets

Section 4: Final question

29. Please comment on any of your responses to this survey that you feel particularly strongly about.

Sweden, Kristineberg Survey

Welcome

Welcome to the ImpactMin mining survey. This European-wide survey aims to capture your views on mining. This survey is part of a European funded project, ImpactMin, looking at people's perceptions and understanding of the mining and extractive industry. The survey is being run by independent researchers at the University of Exeter (UK) and collaborating Institutions including Luleå University of Technology. We are comparing the experiences of people in the UK with sites across Romania, Bosnia and Herzegovina, Sweden and Russia.

The survey is completed anonymously and no one can identify who has responded to the survey, so please feel free to answer the questions honestly. The survey will take around 15 to 20 minutes to complete.

Thank you for taking the time to complete this survey. Your views are very important to understanding people's perception of mining.

Data Protection

All data collected in this survey will be held anonymously and securely.

Section 1: Information about you

1. Are you male or female? ☐ Male ☐ Female
2. What is your age? ☐ Under 18 ☐ 18 - 21 ☐ 21 - 30 ☐ 31 - 40 ☐ 41 - 50 ☐ 51 - 60 ☐ 61 or over
3. What is the highest level of education that you have completed at present?
   - ☐ Elementary (pre-secondary education)
   - ☐ Secondary education
   - ☐ Post-secondary vocational training
   - ☐ College/University level education
   - ☐ Post graduate degree level
   - ☐ Other *(please specify)*:
4. What is your total household income (in 1000 SEK)? ☐ Under 100 tkr ☐ 100-249.9 tkr ☐ 250-399.9 tkr ☐ 400-599.0 tkr ☐ 600-799.9 tkr ☐ 800 tkr or more

5. What is your occupation (if you are currently unemployed or retired please state this as well)?

6. Is your occupation linked in any way to the mining industry?

☐ Yes ☐ No ☐ I don't know

If you do think your occupation is linked to the mining industry, how is it linked?

7. Where do you live?

8. Select the stakeholder group to which you belong. You may feel you belong in more than 1 group and if this is the case please select the 2 main groups.

☐ Local community ☐ Mining company ☐ None

☐ Mining service company ☐ Government body ☐ The media

☐ NGOs (non-governmental organisation or voluntary organisation)

☐ Academic ☐ Other *(please specify):*

Section 2: Understanding of the mining industry

9. From whom do you get your information on mining? Select your top 2 sources.

☐ Mining company ☐ Government/Council

☐ News organisations or the media ☐ NGOs (non-governmental organisation or voluntary organisation) ☐ Local community groups

☐ Neighbours/family/friends ☐ Other *(please specify):*

10. How do you get most of your information about mining? Select your top 2 sources.

☐ Internet ☐ Newspapers ☐ Magazines ☐ Leaflets

☐ Public consultation events ☐ Face to face discussions ☐ TV/radio

☐ Other *(please specify)*:

11. How do you feel about mining in general?

☐ Positive ☐ Neutral ☐ Negative ☐ I don't know

☐ Both positive and negative

Why do you feel this way?

Section 3: Mining in Sweden

12. If known, how far do you live from an active or inactive mine site? Please provide an approximate distance in km. If known, please name your local mining company?

13. What is the significance of mining in your Municipality in the past, at the present and in the future? Please tick the boxes that apply.

	Significant	Not significant	I don't know
Past			
Present			
Future			

14. What have been the major benefits to your Municipality from the presence of the mining industry?

15. If some kind of development is inevitable in your area, indicate your level of preference, compared to a new mine development, from the following options: Tick whether you think the option is more or less preferable compared to a mine being developed in your area.

Option	More preferable than a mine	The same preference as a mine	Less preferable than a mine	I don't know
Waste incinerator				
Factory				
Amusement park				
Wind farm				
Prison				
School				
Eco-town development				
Hospital				
Power station				
Landfill site				

16. Mining in your Municipality - Please classify the following environmental impacts relating to mining (using a tick or mark in the correct box).

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Visual intrusion					
Land contamination					
Water contamination					
Air quality					
Land instability					
Noise					
Dust					

Damage to nature					
Traffic					

17. Please rank your top 3 concerns from the above list (visual intrusion, land contamination, water contamination, air quality, land instability, noise, dust, damage to nature and traffic) if new mining started in your area?

18. Please classify the following impacts of past mining in your Municipality (using a tick or mark in the correct box).

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Workforce health and safety					
Community health and safety					
Job dependency (reliance on mining for employment that may lead to unemployment when the mines close)					
Lack of aspiration					
Poor					

education/training attainment					
Crime and antisocial behaviour					
Ageing population					
Family breakdown					
Poor housing					

19. Please rank your top 3 concerns from the above list (workforce health and safety, community health and safety, job dependency, lack of aspiration, poor education/training, crime and antisocial behaviour, ageing population, family breakdown, poor housing) if new mining started in your area?

20. How would you feel if mines expanded or reopened in your Municipality?

21. In your area, please indicate how the mining industry is performing relating to the following factors?

	Improving	No change	Deteriorating	I don't know
Education and training opportunities				
Local community participation				
Reducing pollution				
Restoring vegetation				
Meeting public expectations				
Workplace health and safety				
Community health and safety				
Local employment				
Community resources				
Aiding the public understanding of mining				
Improving housing				

22. What (in your area) should mining companies do in order to avoid negative impacts and improve positive impacts?

23. With respect to your Municipality (tick what applies):

	Yes	No	I don't know
Have you or any members of your family been employed in the mining industry?			
Do you think mining is an important part of you're the cultural identity/heritage/tradition in your Municipality?			
Do you think mining is an important part of your Municipalities future?			
Would you like more information on the environmental impacts of mining?			

24. Do you think the local community is sufficiently engaged by the government/mining companies regarding the development of existing and new mines?

☐ Yes ☐ No ☐ don't know

25. Is there anything that you would like local mining companies to do for communities in your Municipality?

26. How does the local mining company consult with you? Select what applies to you.

- ☐ No consultation
- ☐ Face to face discussions
- ☐ Phone survey
- ☐ Public meeting
- ☐ Internet survey
- ☐ Postal survey
- ☐ Face to face survey
- ☐ Public display
- ☐ Leaflets
- ☐ Not applicable – (no local mining)
- ☐ Other *(please specify):*

27. What would be the most useful form of consultation for you with a mining company working/planning to work in your area? Please select the 2 most useful forms of consultation:

- ☐ Face to face discussions
- ☐ Phone survey
- ☐ Public meeting
- ☐ Internet survey
- ☐ Postal survey
- ☐ Face to face survey
- ☐ Public display
- ☐ Leaflets
- ☐ Other *(please specify):*

Section 4: Final question

28. Please comment on any of your responses to this survey that you feel particularly strongly about.

UK, Cornwall Survey

Welcome

Welcome to the ImpactMin mining survey. This European-wide survey aims to capture your views on mining. This survey is part of a European funded project, ImpactMin, looking at people's perceptions and understanding of the mining and extractive industry. The survey is being run by independent researchers at the University of Exeter (UK) and collaborating Institutions. We are comparing the experiences of people in Cornwall with sites across Romania, Bosnia and Herzegovina, Sweden and Russia.

The survey is completed anonymously and no one can identify who has responded to the survey, so please feel free to answer the questions honestly. The survey will take around 15 to 20 minutes to complete.

Thank you for taking the time to complete this survey. Your views are very important to understanding people's perception of mining.

Data Protection

All data collected in this survey will be held anonymously and securely.

Section 1: Information about you

1. Are you male or female? ☐ Male ☐ Female
2. What is your age? ☐ Under 18 ☐ 18 - 21 ☐ 21 - 30 ☐ 31 - 40 ☐ 41 - 50 ☐ 51 - 60 ☐ 61 or over
3. What is the highest level of education that you have completed at present?
   - ☐ Compulsory education completed (aged 16 years)
   - ☐ Post compulsory education to 18 years (A levels or equivalent)
   - ☐ Trade/technical/vocational training
   - ☐ Degree level
   - ☐ Post graduate degree level
   - ☐ Other *(please specify)*:
4. What is your total household income? ☐ < £10,000 ☐ £10,000 - £24,999 ☐ £25,000 - £39,999 ☐ £40,000 - £59,999 ☐ £60,000 - £79,999 ☐ £80,000 or more

5. What is your occupation (if you are currently unemployed or retired please state this as well)?

6. Is your occupation linked in any way to the mining industry?

☐ Yes ☐ No ☐ I don't know

If you do think your occupation is linked to the mining industry, how is it linked?

7.How long have you lived in Cornwall?

☐ Less than 1 year ☐ 1 - 5 years ☐ 6 - 10 years ☐ 11 - 15 years
☐ More than 16 years ☐ All my life
☐ I don't live in Cornwall and have never done so
☐ Other *(please specify)*:

If you do not live in Cornwall, where do you live?

8. Select the stakeholder group to which you belong. You may feel you belong in more than 1 group and if this is the case please select the 2 main groups.

☐ Local community ☐ Mining company ☐ None
☐ Mining service company ☐ Government body ☐ The media
☐ NGOs (non-governmental organisation or voluntary organisation)
☐ Academic ☐ Other *(please specify):*

Section 2: Understanding of the mining industry

9. From whom do you get your information on mining? Select your top 2 sources.

☐ Mining company ☐ Government/Council
☐ News organisations or the media ☐ NGOs (non-governmental organisation or voluntary organisation) ☐ Local community groups
☐ Neighbours/family/friends ☐ Other *(please specify):*

10. How do you get most of your information about mining? Select your top 2 sources.

☐ Internet ☐ Newspapers ☐ Magazines ☐ Leaflets
☐ Public consultation events ☐ Face to face discussions ☐ TV/radio
☐ Other *(please specify)*:

11. How do you feel about mining in general?

☐ Positive ☐ Neutral ☐ Negative ☐ I don't know
☐ Both positive and negative

Why do you feel this way?

Section 3: Mining in Cornwall

12. If known, how far do you live from an active or inactive mine site? Please provide an approximate distance in km. If known, please name your local mining company?

13. What is the significance of mining in Cornwall in the past, at the present and in the future? Please tick the boxes that apply.

	Significant	Not significant	I don't know
Past			
Present			
Future			

14. What have been the major benefits to Cornwall from the presence of the mining industry?

15. If some kind of development is inevitable in your area, indicate your level of preference, compared to a new mine development, from the following options: Tick whether you think the option is more or less preferable compared to a mine being developed in your area.

Option	More preferable than a mine	The same preference as a mine	Less preferable than a mine	I don't know
Waste incinerator				
Factory				
Amusement park				
Wind farm				
Prison				
School				
Eco-town development				
Hospital				
Power station				
Landfill site				

16. What impact will the proposed eco-town development have on the St. Austell clay lands area?

☐ Positive ☐ Neutral ☐ Negative ☐ I don't know

☐ Both positive and negative

What do you think the main impacts will be on the area?

17. Mining in Cornwall - Please classify the following environmental impacts relating to mining (using a tick or mark in the correct box).

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Visual intrusion					
Land contamination					
Water contamination					
Air quality					
Land instability					
Noise					
Dust					
Damage to nature					
Traffic					

18. Please rank your top 3 concerns from the above list (visual intrusion, land contamination, water contamination, air quality, land instability, noise, dust, damage to nature and traffic) if new mining started in your area?

19. Please classify the following impacts of past mining in Cornwall (using a tick or mark in the correct box).

	1	2	3		
	High impact	Medium impact	Low impact	No Impact	I don't know
Workforce health and safety					
Community health and safety					
Job dependency (reliance on mining for employment that may lead to unemployment when the mines close)					
Lack of aspiration					
Poor education/training attainment					
Crime and antisocial behaviour					
Ageing population					
Family breakdown					

Poor housing					

20. Please rank your top 3 concerns from the above list (workforce health and safety, community health and safety, job dependency, lack of aspiration, poor education/training, crime and antisocial behaviour, ageing population, family breakdown, poor housing) if new mining started in your area?

21. How would you feel if mines expanded or reopened in Cornwall?

22. In your area, please indicate how the mining industry is performing relating to the following factors?

	Improving	No change	Deteriorating	I don't know
Education and training opportunities				
Local community participation				
Reducing pollution				
Restoring vegetation				
Meeting public expectations				
Workplace health and safety				
Community health and safety				
Local employment				
Community resources				
Aiding the public understanding of mining				
Improving housing				

23. What (in your area) should mining companies do in order to avoid negative impacts and improve positive impacts?

24. With respect to Cornwall (tick what applies):

	Yes	No	I don't know
Have you or any members of your family been employed in the mining industry?			
Do you think mining is an important part of Cornwall's cultural identity/heritage/tradition?			
Do you think mining is an important part of Cornwall's future?			
Would you like more information on the environmental impacts of mining?			

25. Do you think the local community is sufficiently engaged by the government/mining companies regarding the development of existing and new mines?

☐ Yes ☐ No ☐ don't know

26. Is there anything that you would like local mining companies to do for communities in Cornwall?

27. How does the local mining company consult with you? Select what applies to you.

- ☐ No consultation
- ☐ Face to face discussions
- ☐ Phone survey
- ☐ Public meeting
- ☐ Internet survey
- ☐ Postal survey
- ☐ Face to face survey
- ☐ Public display
- ☐ Leaflets
- ☐ Not applicable – (no local mining)
- ☐ Other *(please specify):*

28. What would be the most useful form of consultation for you with a mining company working/planning to work in your area? Please select the 2 most useful forms of consultation:

- ☐ Face to face discussions
- ☐ Phone survey
- ☐ Public meeting
- ☐ Internet survey
- ☐ Postal survey
- ☐ Face to face survey
- ☐ Public display
- ☐ Leaflets
- ☐ Other *(please specify):*

Section 4: Final question

29. Please comment on any of your responses to this survey that you feel particularly strongly about.

Appendix 7 Interview questions

Bosnia Herzegovina, Vihovići

1. What do you (and the wider community) think of mining?
2. Do you think mining is important in Bosnia and Herzegovina? Please explain why you think this?
3. Do you think is mining is important in and around Mostar? Please explain why you think this?
4. Would you support the reopening of mines in Mostar - Vihovići? Explain the reasons why you feel this way, looking at it from a personal and community perspective?
5. What do you think should happen to the former coal mine site at Vihovići? How would you like it to be developed/used in the future?
6. Relating to past mining in Mostar e.g. at Vihovići or the bauxite mines, what have been the positive and negative impacts? Discuss the impacts of mining in terms of environmental, social and economic consequences (both positive and negative).
7. Relating to the potential reopening of mines in Mostar at Vihovići. What would be the positive and negative impacts of mines reopening in Vihovići? Discuss the potential impacts of future mining in terms of environmental, social and economic consequences (both positive and negative).
8. Relating to the current mining in and around Mostar e.g. the bauxite mines. What are the positive and negative impacts of the mining?
9. To what extent are local people involved in the community decision making process regarding mining in your region? Are local people participating and being consulted about decisions that affect the local community?
10. What are the relationships like between local mine companies in your region and the local community? Do local communities support the work carried out by mining companies? Explain this further?
11. Mining in your area... who makes the decisions? Who reaps the benefits? Who looses out? Discuss....
12. Every mine has to end. How was Mostar affected by the decline in mining? Did mining leave communities in your area stronger?
13. Are you worried at all about the past environmental impacts of mining in Mostar e.g. at Vihovići? Would you like more monitoring of potential environmental impacts of mining and if so, who should do the monitoring?
14. How could mining companies have a more positive impact whilst minimising the negative impacts?
15. Is there anything we have discussed that you feel strongly about and would like to comment on further?

Romania, Roşia Montană

Greenpeace Romania:

1. Tell me about Greenpeace's campaign to Save Roşia Montană and what is the aim of the campaign?

2. Do you think is mining important in Romania and specifically in Roşia Montană? Please explain why?
3. Do you (and the local community) support the reopening of the gold mines in Roşia Montană? Explain your reasons why you feel this way, looking at it from a personal and community perspective?
4. What % of the local community do you believe are for and opposed to the mine reopening?
5. What contact have Greenpeace had with the local community regarding the mine reopening?
6. What do you think of mining in general?
7. How could mining companies have a more positive impact whilst minimising the negative impacts?
8. Relating to past mining in the area, what have been the positive and negative impacts? Discuss the impacts of mining in terms of environmental, social and economic consequences (both positive and negative).
9. Relating to the potential reopening of the mines. What will be the positive and negative impacts of mining in the area? Discuss the potential impacts of future mining in terms of environmental, social and economic consequences (both positive and negative).
10. I found the main reason many local people supported the mines reopening was to generate jobs in the area. What do you see as alternative sources of employment to mining in Roşia Montană?
11. Would you like more monitoring of potential environmental impacts of mining and if so, who should do the monitoring?
12. To what extent are local people involved in the community decision making process regarding the mine reopening? Are local people participating and being consulted about decisions that affect the local community? Who are local people being consulted by regarding the mine reopening (e.g. local government, Roşia Montană Gold Corporation etc)?
13. What are the relationships like between local mine company and the local community? Do local communities support the work carried out by mining companies? Explain this further?
14. Mining in your area... who makes the decisions? Who gets the benefits? Who looses out? Discuss....
15. Every mine has to end. What will happen in Roşia Montană when the mine closes? Will it leave Roşia Montană stronger as a community?
16. Why is the reopening of gold mines in Roşia Montană so controversial?
17. Is there anything we have discussed that you feel strongly about and would like to comment on further?

Other interview/focus group questions used in Romania:

Focus group questions for Roşia Montană:

Core questions for all sites:

1. Do you think is mining important in Romania and specifically in Roşia Montană? Please explain why?

2. Do you (and the local community) support the reopening of the gold mines in Roşia Montană? Explain your reasons why you feel this way, looking at it from a personal and community perspective?
3. What do you (and the wider community) think of mining? How could mining companies have a more positive impact whilst minimising the negative impacts?
4. Relating to past mining in the area, what have been the positive and negative impacts? Discuss the impacts of mining in terms of environmental, social and economic consequences (both positive and negative).
5. Relating to the potential reopening of the mines. What will be the positive and negative impacts of mining in the area? Discuss the potential impacts of future mining in terms of environmental, social and economic consequences (both positive and negative).
6. Would you like more monitoring of potential environmental impacts of mining and if so, who should do the monitoring?
7. To what extent are local people involved in the community decision making process regarding the mine reopening? Are local people participating and being consulted about decisions that affect the local community? Who are local people being consulted by regarding the mine reopening (e.g. local government, Roşia Montană Gold Corporation etc)?
8. What are the relationships like between local mine company and the local community? Do local communities support the work carried out by mining companies? Explain this further?
9. Mining in your area... who makes the decisions? Who reaps the benefits? Who looses out? Discuss....
10. Every mine has to end. What will happen in Roşia Montană when the mine closes? Will it leave Roşia Montană stronger as a community?
11. Why is the reopening of gold mines in Roşia Montană so controversial?
12. Is there anything we have discussed that you feel strongly about and would like to comment on further?

Resettled group questions:

1. What impact has being relocated had on your life and the life of your family and community?
2. What have been the positive and negatives of being relocated and resettled in Alba Iulia?

Russia Interview questions:

Focus group/interview questions for all 3 sites Gay, Mednogorsk and Karabash:

1. What do you think of mining?
2. Do you think mining is important in your region? Please explain why?
3. Mining / smelting / metal processing in your area - who makes the decisions? Who gets the benefits? Who looses out? Discuss....
4. Relating to past mining in the area, what have been the positive and negative impacts? Discuss the impacts of mining in terms of environmental, social and economic impacts.

5. Would you (and the local community) support the reopening/expansion of mines and related industries (e.g. copper sulphate plants and smelters) in Gay / Mednogorsk / Karabash? Explain why you feel this way?
6. What would be the positive and negative impacts if mining and related industries expanded in the area? Discuss the potential impacts of future increases in mining and related industries in terms of environmental, social and economic impacts (both positive and negative).
7. How could mining companies (and related smelter and metal processing plants) have a more positive impact whilst minimising the negative impacts?
8. Are local people involved in the decision making process regarding how mines/metal processing plants/the smelter operate?
9. Are local people being consulted about decisions that affect the local community regarding mining and related industries like metal processing?
10. Every mine has to end. What will happen in your area when the mines close and the related metal processing and smelter industries decline? Will it leave your community stronger?
11. Would you like more monitoring of environmental impacts of mining/ metal processing or smelting and if so, who should do the monitoring?
12. Is there anything we have discussed that you feel strongly about and would like to comment on further?

Gay - local people

1. What are the social and economic benefits of mining in Gay?
2. What are the negative impacts of mining in Gay?
3. Are you worried about potential environmental impacts of the mines? If so, what are you worried about?
4. Would you support further expansion of the mining industry in Gay?
5. What are the relationships like between the local mining companies and the local community? Do local communities support the work carried out by local mining company? Explain this further?

Mednogorsk – local people

1. What are the social and economic benefits of the copper sulphate plant in Mednogorsk?
2. What are the negative impacts of the copper sulphate plant in Mednogorsk?
3. Are you worried about potential environmental impacts of the copper sulphate plant? If so, what are you worried about?
4. Would you support further expansion of the copper sulphate plant in Mednogorsk?
5. What are the relationships like between the copper sulphate company and the local community? Do local communities support the work carried out by the copper sulphate company? Explain this further?

Karabash – local people

1. What are the social and economic benefits of the smelter in Karabash?
2. What are people most worried about relating to the impacts of the smelter?
3. Are you worried about potential environmental impacts (e.g. contamination) of the smelter? If so, why are you worried?

4. Are you and the wider community concerned about potential health effects of the pollution from the smelter?
5. How did the smelter closing between 1997 and 2006 affect the people of Karabash?
6. Did people want the smelter to reopen?
7. What are people most worried about: job losses from the smelter closing or potential contamination from the smelter?
8. Since the smelter reopened, have unemployment rates decreased in Karabash?
9. Is the environment around Karabash monitored for potential environmental impacts from the smelter?
10. Would you (and the local community) support further development of the smelter operations in Karabash?
11. What are the relationships like between the smelter company and the local community? Do local communities support the work carried out by the smelter company? Explain this further?

Sweden, Kristineberg/Malå/Umeå interview questions:

1. What do you (and the wider community) think of mining?
2. Do most people support mining in the area?
3. Do you think is mining is important in Sweden? Please explain why you think this?
4. How important is mining in this region? Please explain why you think this?
5. Would you support the expansion of mines in this region? Explain the reasons why you feel this way, looking at it from a personal and community perspective?
6. How could mining companies have a more positive impact whilst minimising the negative impacts?
7. Relating to past mining in this area, what have been the positive and negative impacts? Discuss the impacts of mining in terms of environmental, social and economic consequences (both positive and negative).
8. If mining were to expand in this region, what would be the positive and negative impacts? Discuss the potential impacts of future mining in terms of environmental, social and economic consequences (both positive and negative).
9. To what extent are local people involved in the community decision making process regarding mining in this region and in Sweden in general? Are local people participating and being consulted about decisions that affect the local community?
10. What are the relationships like between local mine companies in this area and the local community? Do local communities support the work carried out by mining companies? Explain this further?
11. Mining in your area... who makes the decisions? Who gets the benefits? Who looses out? Discuss....
12. Every mine has to end. What will happen to this area if and when mines do close?
13. Are you worried about the environmental impacts of mining in this area? Would you like more monitoring of potential environmental impacts of mining and if so, who should do the monitoring?

14. What legacy/impact has mining had on the culture/mindset of people in this region?
15. Is mining heritage important in this region?
16. Is there anything we have discussed that you feel strongly about and would like to comment on further?

Questions for people working in reindeer husbandry/ the Sami community/ wildlife protection/ cultural heritage/ regional development

- How does mining affect your lives/work?
- Are there any issues/conflicts with your work and mining? If so what are these issues? How do you account for/overcome these issues? What communication do you have with the local mining company about how best to resolve any issues and reach a compromise where any conflict does arise?

Interview questions for Boliden:

For miners:

- Out of your employees at the mine in Kristineberg how many people are local people and how many people are from the Sami community?

General questions:

- Briefly describe what operations you have in Kristineberg in terms of what you mine, where you process things and how many people Boliden employ?
- Out of your employees at the mine in Kristineberg wow many people are local people and how many people are from the Sami community?
- How important is mining in this region?
- How has the number of people employed by Boliden changed over time?
- How long will your current mines operate for in this area?
- Do you have any plans to open new mines or expand existing mines?
- How do Boliden try to maximise the positive impact they have whilst minimising the negative impacts?

CSR

- What CSR policy/guidelines do Boliden follow? (e.g. Mining companies can sign to CSR agreements by: International Council on Mining and Metals (ICMM), UN Global Compact, The Initiative for Responsible Mining Assurance (IRMA) and Extractive Industries Transparency Initiative (EITI).
- What guidelines do you have to follow relating to planning regulations and environmental monitoring for your operations?
- What is your company's policy on ensuring social sustainability throughout mining operations and beyond?
- What programme do you have in place to ensure a sustainable post-mining community?
- Do you have any examples of 'best practice' in responsible mining in how Boliden operations are run?

Stakeholder questions:

- What participation and consultation do other stakeholders have in mining activities at this site and name the stakeholders involved?
- How important does Boliden view having direct consultation/participation with the local community?
- What level of support do you feel the surrounding community have for your operations? How do you try and gain the support/trust of local people?
- How do you feedback information to the local community and other stakeholders to make them feel involved in the process?
- How do you manage communication and ensure good relationships amongst stakeholders that are relevant to your work (e.g. general public and NGOs given the challenges of communicating risk and maintaining two-way dialogue? (risk communication).
- Do you think there have been changes in public expectations of the mining industry and your company over time? Can you explain why you think this?

Local community

- What do you consider are the negative impacts of mining to the local community and how are you trying to minimise these issues?
- What do you consider are the positive impacts of mining to the local community and how do you try and maximise these?
- What does your company offer in terms of social and economic benefits to the local community?

Environmental – cutting carbon

- How is your company seeking to reduce your carbon footprint and what measures are you taking to reduce your energy usage and improve efficiency?
- Provide examples of your initiatives and 'best practice' in cutting carbon.
- How are you calculating your potential carbon footprint at Boliden?

UK, Cornwall interview questions:

Core questions for stakeholders:

1. What do you (and the wider community) think of mining in general?
2. Do you think is mining is important in Cornwall? Please explain why you think this?
3. Would you support the reopening of mines in Cornwall? Explain the reasons why you feel this way, looking at it from a personal and community perspective?
4. How could mining companies have a more positive impact whilst minimising the negative impacts?
5. Relating to past mining in Cornwall, what have been the positive and negative impacts? Discuss the impacts of mining in terms of environmental, social and economic consequences (both positive and negative).
6. Cornwall has some excellent post-mining projects alongside the potential for reopening closed mines or opening new mines– where do you see the future economically for Cornwall – post-mining projects, new mining or a combination of both?

7. Relating to the potential reopening of mines in Cornwall. What would be the positive and negative impacts of mines reopening in Cornwall? Discuss the potential impacts of future mining in terms of environmental, social and economic consequences (both positive and negative).
8. To what extent are local people involved in the community decision making process regarding mining in Cornwall / mines reopening? Are local people participating and being consulted about decisions that affect the local community?
9. What are the relationships like between local mine companies in Cornwall and the local community? Do local communities support the work carried out by mining companies? Explain this further?
10. Mining in your area... who makes the decisions? Who reaps the benefits? Who looses out? Discuss....
11. Every mine has to end. How was Cornwall affected by the decline in mining? Did mining leave communities in Cornwall stronger?
12. How did Cornwall start regenerating and diversifying to other industries after the decline of the mining industry?
13. What legacy/impact has mining had on the culture/mindset of Cornish people?
14. Are you worried at all about the past environmental impacts of mining in Cornwall? Would you like more monitoring of potential environmental impacts of mining and if so, who should do the monitoring?
15. Is there anything we have discussed that you feel strongly about and would like to comment on further?

Cornwall questions for Western United Mines:

General questions:

- Describe what operations you intend to run in Cornwall in terms of what you will mine, where you will process things and how many people you currently employ and plan to employ in the future?
- How has the number of people employed by WUM changed over time?
- How long will your current mines operate for in this area?
- How do WUM try to maximise the positive impact they have whilst minimising the negative impacts?
- How important is mining in Cornwall? How important do you think mining will be in Cornwall in the future?

CSR

- As a business, what is your policy on CSR?
- What post mining programme do you have in place?
- Do you have any examples of ‘best practice’ in responsible mining in terms of how operations are run?

Stakeholder questions:

- What participation and consultation have you had with the local community and other stakeholders?
- At what point did you start talking to local people about the reopening of South Crofty?

- How important do you view having direct consultation/participation with the local community?
- What level of support do you feel the surrounding community have for your operations? How do you try and gain the support/trust of local people? Is it important to you that local people support your work?
- How do you feedback information to the local community and other stakeholders to make them feel involved in what you are doing?
- Do you think there have been changes in public expectations of the mining industry and your company over time? If so, can you explain why you think this?

Local community

- What do you consider are the negative impacts of mining to the local community and how are you trying to minimise these issues?
- What do you consider are the positive impacts of mining to the local community and how do you try and maximise these?
- What does your company offer in terms of social and economic benefits to the local community?

Environmental – cutting carbon

- How is your company seeking to reduce your carbon footprint and what measures are you taking to reduce your energy usage and improve efficiency?
- How are you calculating your potential carbon footprint at WUM?

Cornwall questions for Imerys:

General questions:

- Describe what operations you have in Cornwall?
- How has the number of people employed by Imerys changed over time?
- How long will your current clay pits operate for in this area?
- Do you have any plans to open new pits?
- How do you try to maximise the positive impact they have whilst minimising the negative impacts?
- How important is mining in Cornwall at the present? How important do you think mining will be in Cornwall in the future?

CSR

- What CSR policy/guidelines does Imerys follow? (e.g. Mining companies can sign to CSR agreements by: International Council on Mining and Metals (ICMM), UN Global Compact, The Initiative for Responsible Mining Assurance (IRMA) and Extractive Industries Transparency Initiative (EITI).
- What is your company's policy on ensuring social sustainability throughout mining operations and beyond?
- What programme do you have in place to ensure a sustainable post-mining community?
- Do you have any examples of 'best practice' in responsible mining in how operations are run?

Stakeholder questions:

- What participation and consultation do you have with the local community and other stakeholders?
- How important does Imerys view having direct consultation/participation with the local community?
- Do you think it is essential these days in the extractive industry to have the support of the local community in which you operate?
- What level of support do you feel the surrounding community have for your operations? How do you try and gain the support/trust of local people? Is it important to you that local people support your work?
- Do you think there have been changes in public expectations of the mining industry and your company over time? If so, can you explain why you think this?

Local community

- What do you consider are the negative impacts of mining to the local community and how are you trying to minimise these issues?
- What do you consider are the positive impacts of mining to the local community and how do you try and maximise these?
- What does your company offer in terms of social and economic benefits to the local community?

Environmental – cutting carbon

- How is your company seeking to reduce your carbon footprint and what measures are you taking to reduce your energy usage and improve efficiency?
- How are you calculating your carbon footprint at Imerys?

Eco-town:

- How will the eco-town affect local people? How will it impact on local people considering both the positive and negative impacts?
- How has the social impact of the eco-town been considered?
- What is the level of support like for the eco-town by the local community?
- What consultation work/participation have local people had in the proposed eco-town development so far?

Interview questions for the Natural Resources planning team (mineral planners):

Core questions for all sites:

1. Could you describe the process to me as to how the natural resources planning team are involved in the process of establishing and running a mine?
2. What considerations are made in the planning process for opening a mine regarding the socio-economic impact on local people?
3. What social considerations are given when a decision is made regarding whether a mine should or should not open?
4. How are the local community consulted in the process of a mine being established?
5. What consultation has taken place with local people about South Crofty reopening? What is planned for the future?

6. What are the relationships like between local mine companies in Cornwall and the local community? Do local communities support the work carried out by mining companies? Explain this further?
7. When speaking to people in Brea, people had concerns about the impact South Crofty would have on their house prices. Do you know what is being done to alleviate this and reassure people?
8. Could you explain what stage South Crofty is at regarding their planning application? How long would it take to reopen? If this is deemed possible?
9. How does the natural resources team safeguard minerals for future use?
10. Do you think is mining is important in Cornwall?
11. How could mining companies have a more positive impact whilst minimising the negative impacts?
12. Relating to past mining in Cornwall, what have been the positive and negative impacts? Discuss the impacts of mining in terms of environmental, social and economic consequences (both positive and negative).
13. Relating to the potential reopening of mines in Cornwall. What would be the positive and negative impacts of mines reopening in Cornwall? Discuss the potential impacts of future mining in terms of environmental, social and economic consequences (both positive and negative).
14. To what extent are local people involved in the community decision making process regarding mining in Cornwall / mines reopening? Are local people participating and being consulted about decisions that affect the local community?
15. What considerations are given when during the planning process for mine closure? How are the past environmental impacts of mining in Cornwall monitored and who pays for remediation of contaminated sites? Is there anything we have discussed that you feel strongly about and would like to comment on further?

Interview questions for Camborne, Pool and Redruth (CPR) Regeneration:

1. Do you think is mining is important in Cornwall? Please explain why you think this?
2. Would you support the reopening of mines in Cornwall?
3. How could mining companies have a more positive impact whilst minimising the negative impacts?
4. Relating to past mining in Cornwall, what have been the positive and negative impacts? Discuss the impacts of mining in terms of environmental, social and economic consequences (both positive and negative).
5. Cornwall has some excellent post-mining projects alongside the potential for reopening closed mines or opening new mines– where do you see the future economically for Cornwall – post-mining projects, new mining or a combination of both?
6. How did Cornwall start regenerating and diversifying to other industries after the decline of the mining industry?
7. Do you feel there is a conflict between the need to safeguard minerals for potential future use and the work you have done relating to the regeneration of

CPR? If so, what are the conflicts? Have you found this a barrier within the regeneration programme?

8. Are you worried at all about the past environmental impacts of mining in Cornwall? Would you like more monitoring of potential environmental impacts of mining and if so, who should do the monitoring?
9. Is there anything we have discussed that you feel strongly about and would like to comment on further?
10. How did you consult with the local community about the CPR regeneration projects? What consultation/local participation events did you hold?
11. How involved are local people in CPR regeneration projects?
12. Is there anything you would do differently?

Questions for a local Mining consultancy firm in Cornwall who carry out ESIAs:

- Can you tell me a bit about what work you do, what projects you are working on and where you work?
- What interesting projects/case studies have you come across regarding responsible mining (good and bad examples)?
- How are you expanding in to looking at the social impacts of mining/community/stakeholder engagement?
- Why do you feel mining companies are starting to put more emphasis on the looking at the social impacts of mining – e.g. what is the driver behind it (e.g. public expectation etc)?
- How do you think mining companies can build successful relationships with the local community?
- What does CSR mean to your clients and to you?
- How important do you think CSR is in the mining industry?
- What do you think about the different CSR initiatives/guidelines that exist e.g. ICMM, UN Global Compact (human rights, labour, environment and anti-corruption) etc.
- How important do you believe community engagement is within the mining industry?
- How important do your clients believe it is to create strong links with local people and gain the 'social license to operate'?
- Do you think public expectations have changed of the mining industry over time? If so, how have they changed?
- One of the instigating factors behind my project is the need to ensure that we have supplies of resources within Europe and therefore have enhanced resource security. What do you think about resource security issues globally and within Europe? How do you see things changing in the future in terms of our need to maintain the supply of minerals?
- Cutting carbon – have you come across any novel ways companies are looking at in reducing their carbon footprint?