

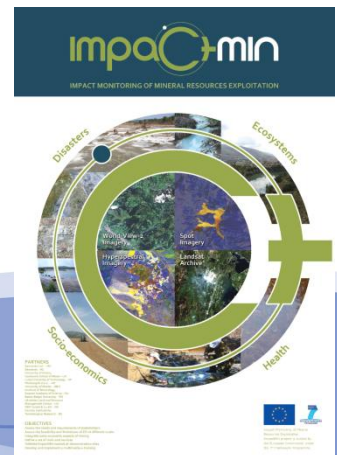
WP3 – the socio-economic impacts of mining

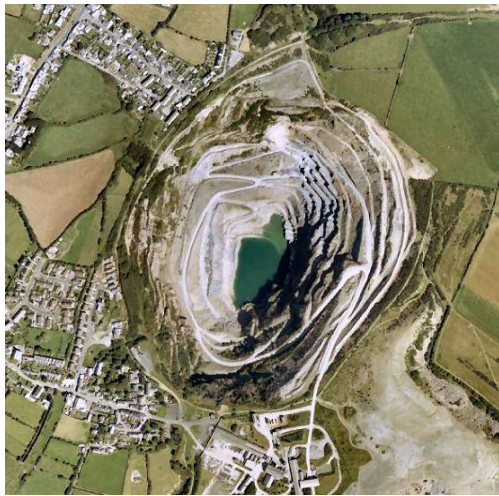
Ben Williamson

**on behalf of Elizabeth Adey, Robin Shail,
Frances Wall and WP3 partners**

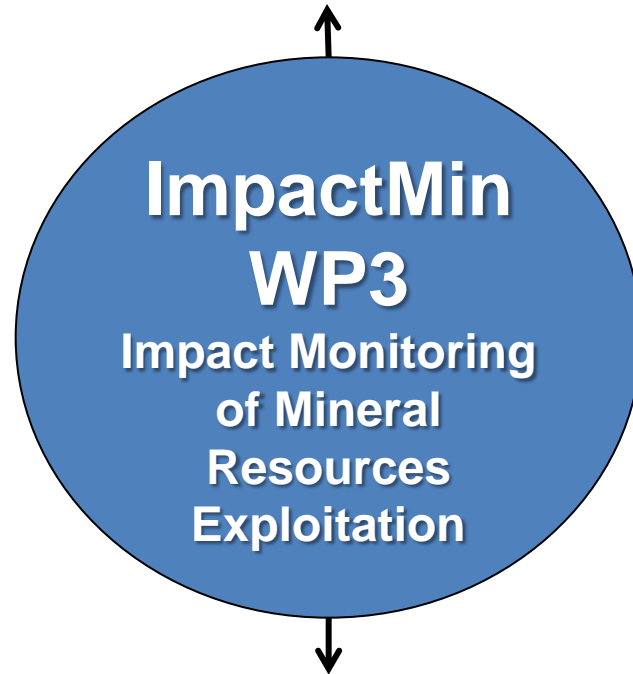
**Camborne School of Mines
College of Engineering, Mathematics and Physical Sciences
University of Exeter**

**FULL DETAILS IN REPORTS D3.1 / D3.2
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Responsible mining



ImpactMin WP3

Impact Monitoring
of Mineral
Resources
Exploitation

Research

- ➔ What do you think about mining ?
- ➔ How has mining affected you ?

- Social and economic impacts of mining
 - Perception and understanding of mining

WP3 partners

- Institute of Mineralogy, Miass – Valery Udachin, Oleg Telenkov, Pavel Aminov
- University of Babes-Bolyai – Calin Baciuc
- University of Mostar – Ivan Lovric, Ivo Colak, Mirna Raič, Danijela Maslac
- University of Exeter (CSM plus Matthias Varul and Eden Project – Pete Whitbread-Abrutat)
- Luleå University of Technology – Thomas Ejdemo, Frauke Ecke

WP3 study sites



www.map-of-europe.us

Sites clockwise from east

- Russia (Karabash, Gay / Mednogorsk)
- Romania (Roşia Montană)
- Bosnia Herzegovina (Vihovici)
- UK (Cornwall)
- Sweden (Kristineberg / Malå)

Survey questionnaire design

ImpactMin Cornwall workshop in May 2010

- Generic questions that were asked across all 7 sites
- Questions relating to specific issues at each site
- Typically around 28 questions per survey
- Opportunistic responses

Example - scale question

	1	2	3	4	5
	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					

A photograph of a modern building with a large glass facade and a stone-textured lower section, partially obscured by a blue wavy graphic element.

Example - open ended question

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

How many surveys?

Country	Demo site	Number of surveys
Bosnia Herzegovina	Vihovići	124
Romania	Roşia Montană	97
Russia	Gay	41
Russia	Karabash	40
Russia	Mednogorsk	32
Sweden	Kristineberg	66
UK	Cornwall	303
Total surveys		703

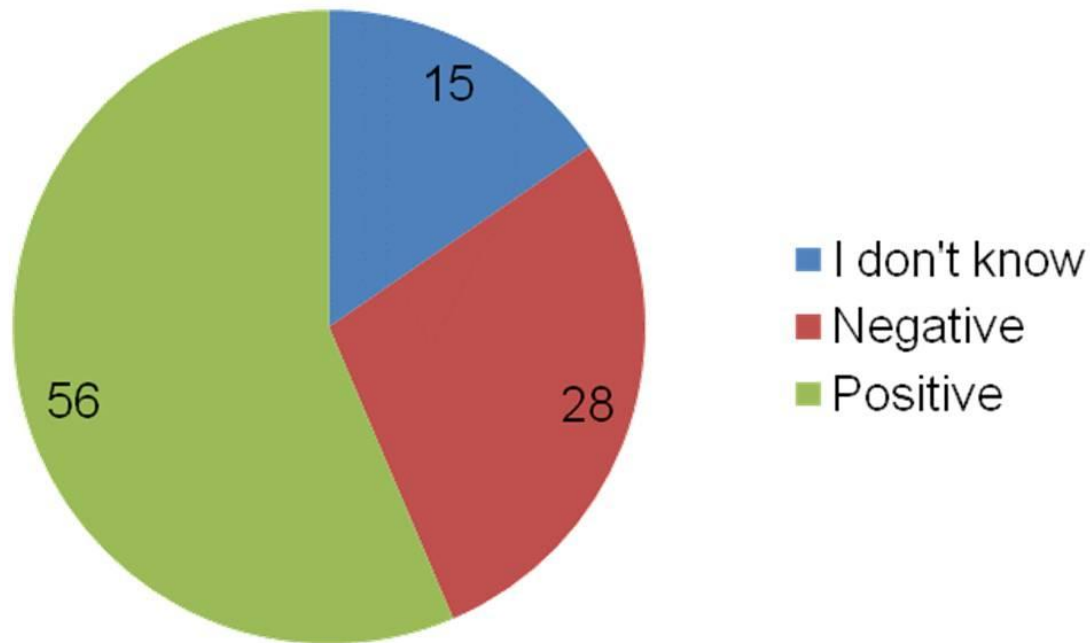
 **Plus 49 interviews across 7 sites**

Karabash, Chelyabinsk Oblast region

- Cu smelter opened in 1910
- Population ~15,000; 1950s >50,000
- Smelter closed 1991-1997 due to environmental impact
- Locals wanted it reopened
- Ageing population ~20.5 % (mean for Russia 13.7 %)
- Abandoned mines, tailings, waste dumps, slags, AMD
- Health impacts include metal poisoning, respiratory diseases, high incidence of cancer and other diseases
- Exacerbated by proximity of town to the smelter

Karabash

How would you feel if the metal processing industry expanded or mines reopened (%)?



What could the smelter company do to reduce negative impacts and improve positive impacts?

“Protect the population from the emissions of harmful substances”

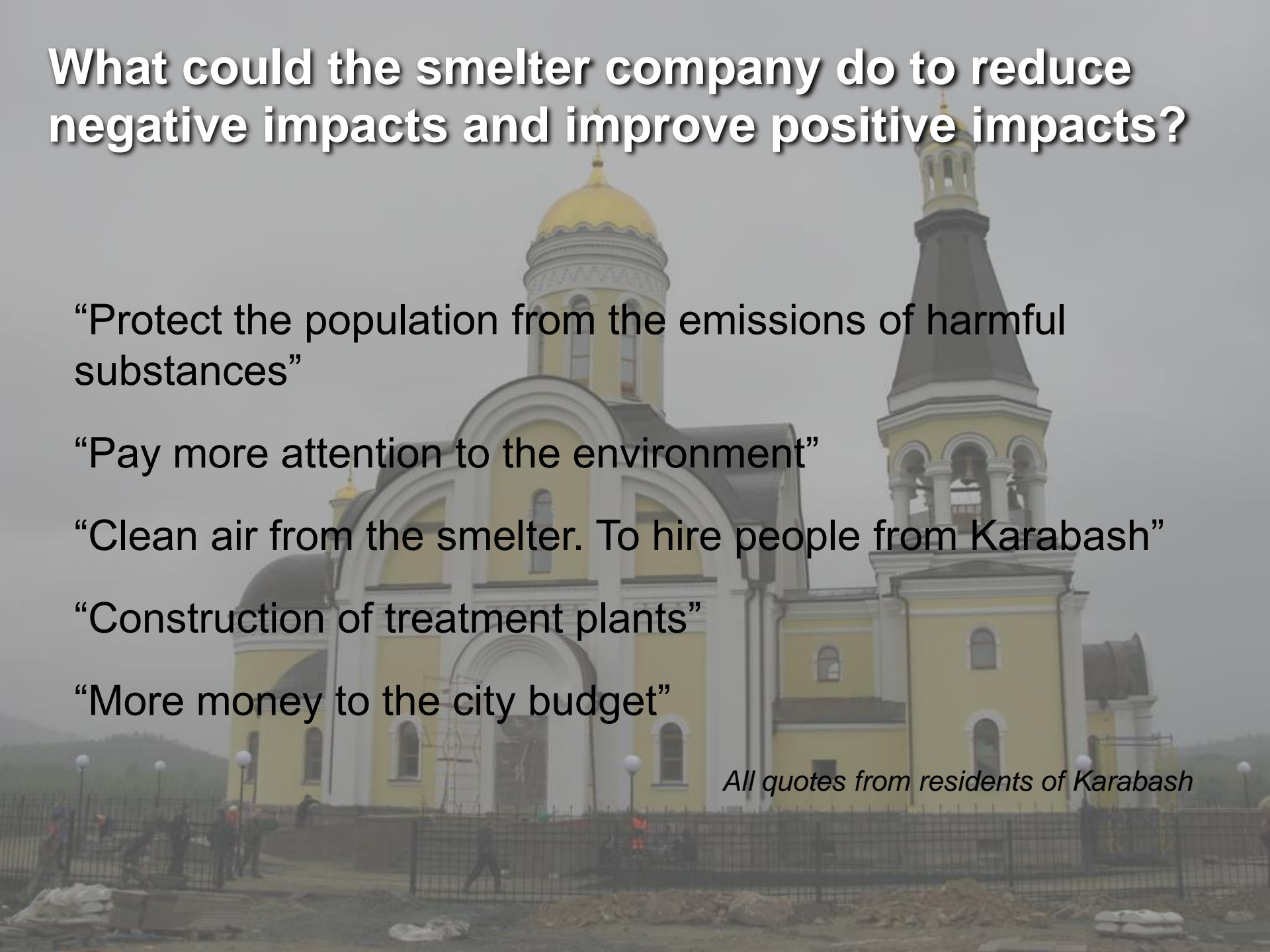
“Pay more attention to the environment”

“Clean air from the smelter. To hire people from Karabash”

“Construction of treatment plants”

“More money to the city budget”

All quotes from residents of Karabash



Orenburg Oblast region

Gay

- Active mines - Cu, Au, Fe
- Localised environmental issues – AMD, no smelter
- Purpose built town that grew in 1950s; population 41,621
- Unemployment ~0.4 - 2 %
- Relatively affluent, contrasts starkly with Karabash

Mednogorsk

- Smelter producing blister Cu and S
- Opened in 1937
- Environmental issues from emissions and AMD
- Smelter stack short so emissions confined to valley and town (population 31,369)
- Relatively affluent

Gay

Environmental impacts of mining rated 'high impact':

- 1) 36 % - Air quality
- 2) 32 % - Water contamination
- 3) 30 % - Land contamination

Socio-economic impacts of mining rated 'high impact':

- 1) 82 % - Job dependency
- 2) 65 % - Workforce health and safety
- 3) 37 % - Ageing population

Mednogorsk

The background image shows a mining landscape. In the foreground, there are rocky, brownish hills with some sparse green vegetation. In the middle ground, there is a large industrial facility with several buildings and a tall, dark smokestack emitting a plume of white smoke. The sky is blue with some light clouds.

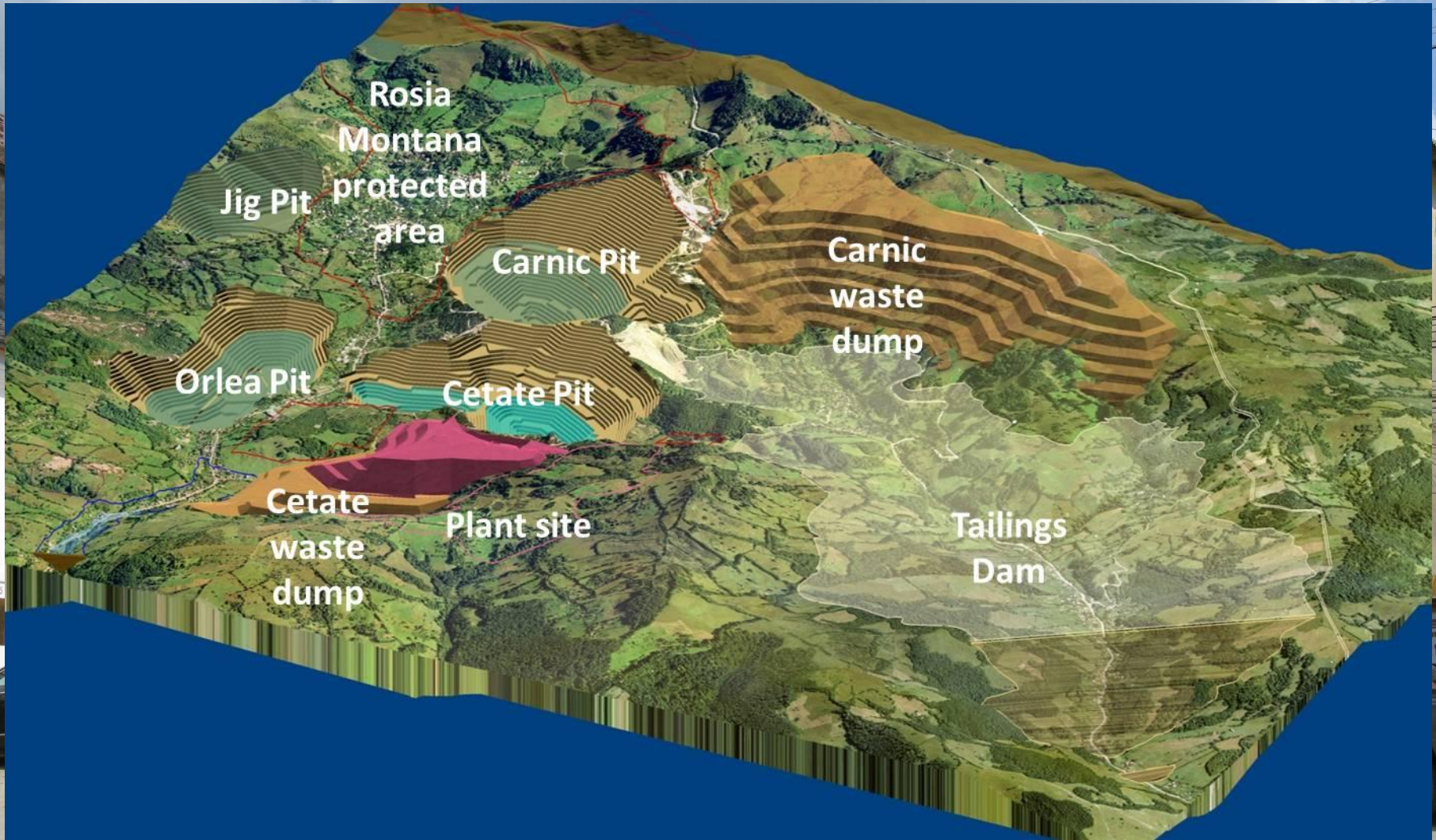
Environmental impacts of mining rated 'high impact':

- 1) 52 % - Air quality**
- 2) 44 % - Damage to nature**
- 3) 41 % - Dust**

Socio-economic impacts of mining rated 'high impact':

- 1) 77 % - Job dependency**
- 2) 60 % - Ageing population**
- 3) 44 % - Community health and safety**

Roșia Montană, Romania



Roșia Montană: Stakeholder views



“Mining is not a must for the country. We have other opportunities and advantages that we have to use that have no negative impact on the environment”
(Greenpeace Romania)

“Most of the people are miners or come from mining backgrounds. It brings jobs in the area. The area is a mining area. It is not suitable for other activities. The land is not good for anything else”
(teacher and resident of Roșia Montană commune).

Alba Iulia, Romania – one of the relocation sites



- By 2006, 594 residential properties purchased and 1028 non-residential in environmental boundary
- Relocation options Alba Iulia, free choice or the new Roșia Montană (Piatra Albă)
- Difficult to please everyone, community conflict

Roșia Montană, Romania

A scenic view of a river in Roșia Montană, Romania. The river flows through a lush green landscape with a bridge in the background. On the left, there are buildings, including one with a red roof and a sign that says 'La Poza'. The sky is clear and blue.

Environmental impacts of mining rated 'high impact':

- 1) 13 % - Visual intrusion**
- 2) 12 % - Water contamination**
- 3) 4 % - Noise**

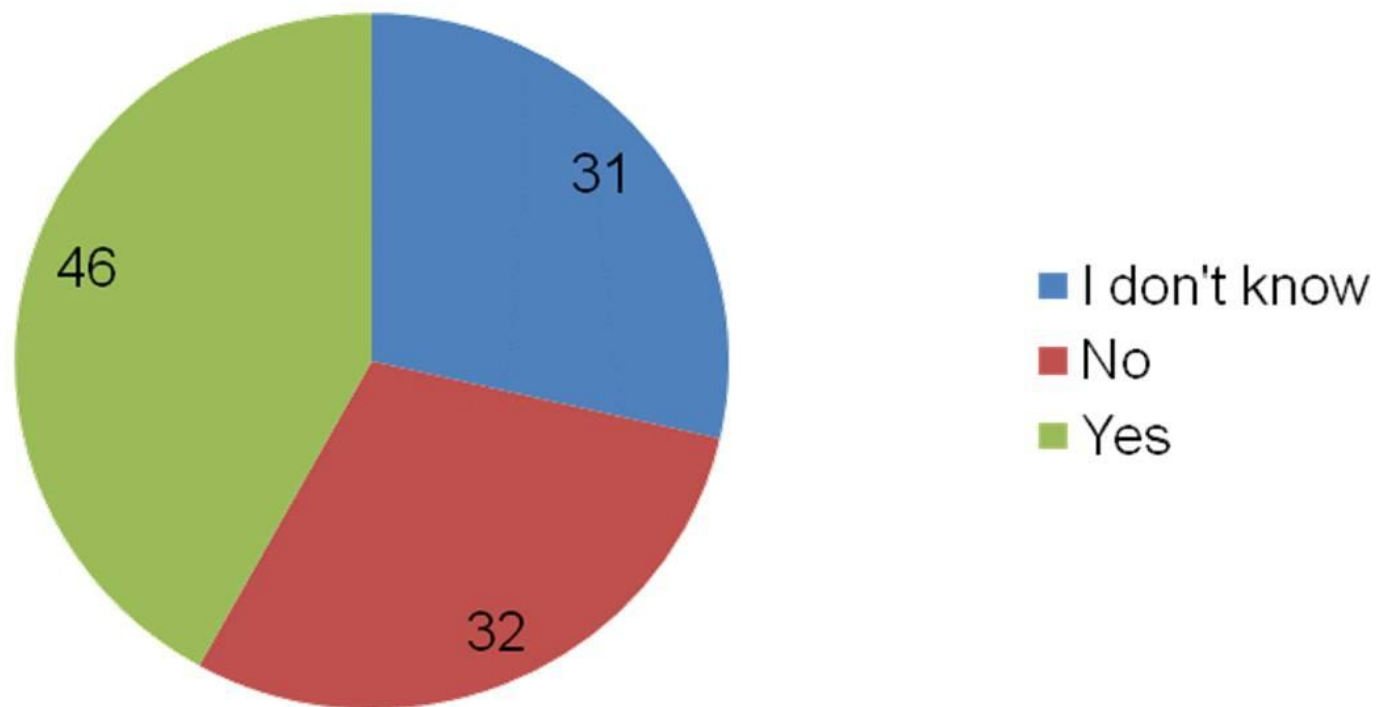
Socio-economic impacts of mining rated 'high impact':

- 1) 37 % - Job dependency**
- 2) 22 % - Workforce health and safety**
- 3) 22 % - Community health and safety**

Vihovici, Mostar, Bosnia Herzegovina

- Opened in 1881
- 1919 to 1991 - 11 million tonnes of brown coal
- Mostar population ~100,000
- High unemployment >37 %, mean wage below national average
- Underground fires now extinguished on coal seams
- During war pit used as a waste tip –since been cleaned
- Slope stability - illegal housing on pit edge
- Future use of site?

Would you like Vihovici to reopen (%)?



Kristineberg, near Malå, Sweden

Boliden AB

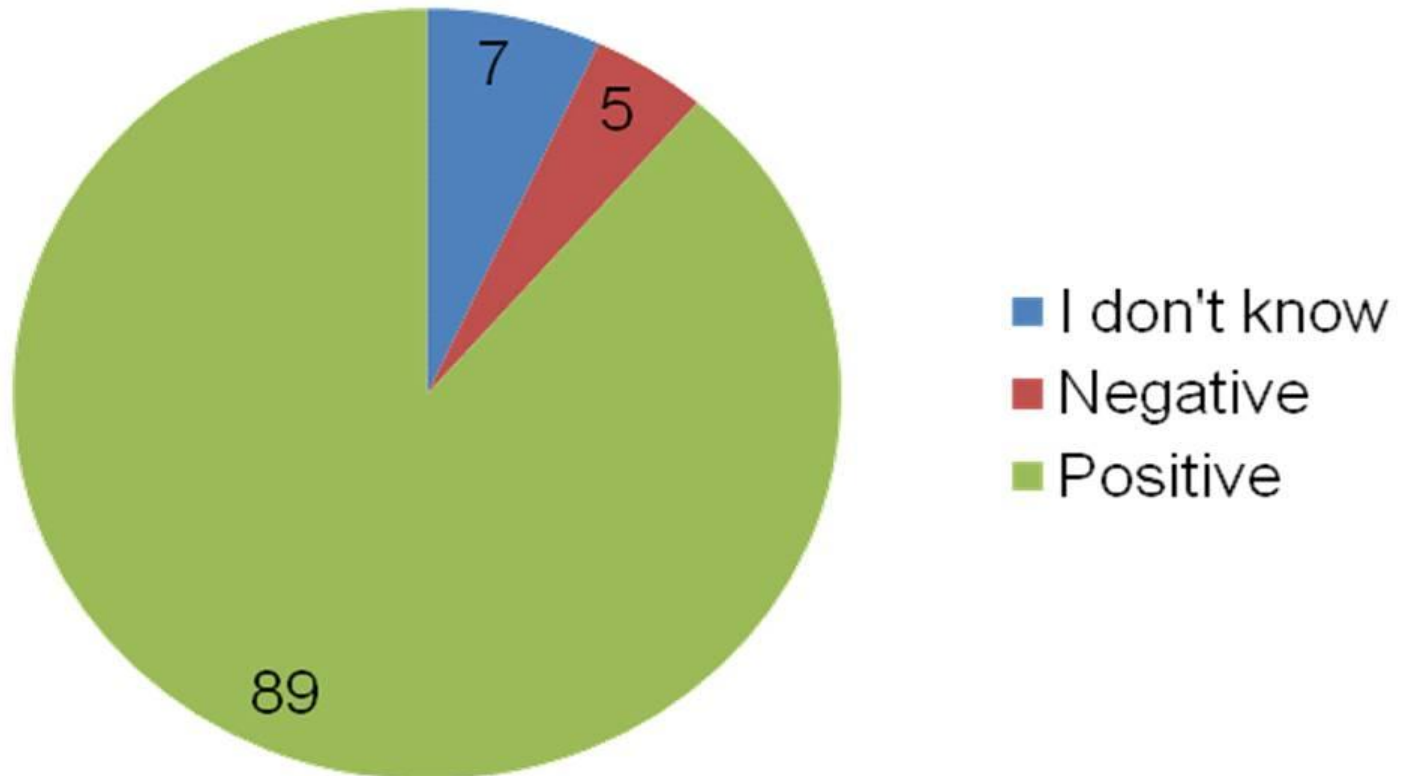


Kristineberg/Malå, Vasterbotten County, Sweden

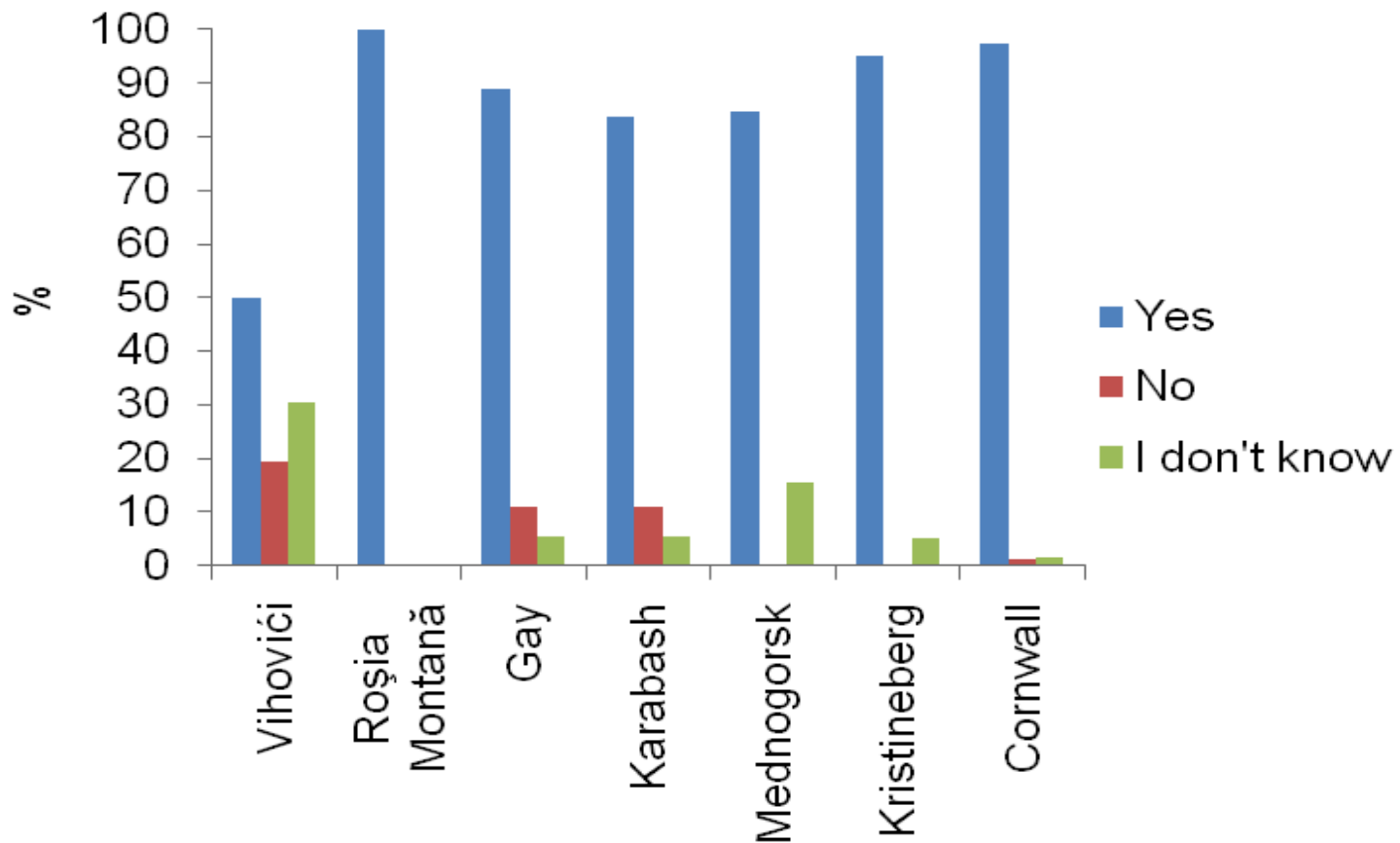
- Boliden AB employ 390 people in 'Boliden area' and mine Zn, Cu, Pb, Au and Ag
- Kristineberg - purpose built with a population ~300, Malå ~3000
- Kristineberg declining population due to processing plant closing
- Unemployment rates low
- Kristineberg – facilities decrease with population. Village becomes more undesirable – people move whole house
- Environmental issues e.g. Hornträsk Lake, AMD, waste dumped in abandoned pits

Kristineberg/Malå, Sweden

How would you feel if mines expanded (%)?



Is mining an important part of the identity / heritage / tradition?



What do you think about mining?

"X mining heritage is highly important on both a local and global scale, yet mining is very destructive of the environment"

"Beneficial industry. X depends on mining"

"The country needs copper. People need work"

"Listen, here in X, almost everybody used to be working in the Mine, it was not easy, but at least people worked!"

UK - Cornwall

Romania - Roșia Montană

Russia - Mednogorsk

Russia - Gay

Russia - Karabash

Bosnia Herzegovina, Mostar - Vihovici

Sweden - Kristineberg/Malå

"The city is suffocating from the smoke, the rivers are poisoned by acid emissions"

"Without mining there will be no jobs in X"

"Air pollution"

Is there anything you would like the mining/metal processing company to do for your community?

“Invest in the future and stop X becoming a Regional development Agency theme park”

“Road! Park. Stadium. New schools and kindergartens”

“Clear out the houses that were built by X. The community is dying. With the help of the mining company and the municipality the village might live on”

UK - Cornwall

Romania - Roșia Montană

Russia - Mednogorsk

Russia - Gay

Russia - Karabash

Bosnia Herzegovina, Mostar - Vihovici

Sweden - Kristineberg/Malå

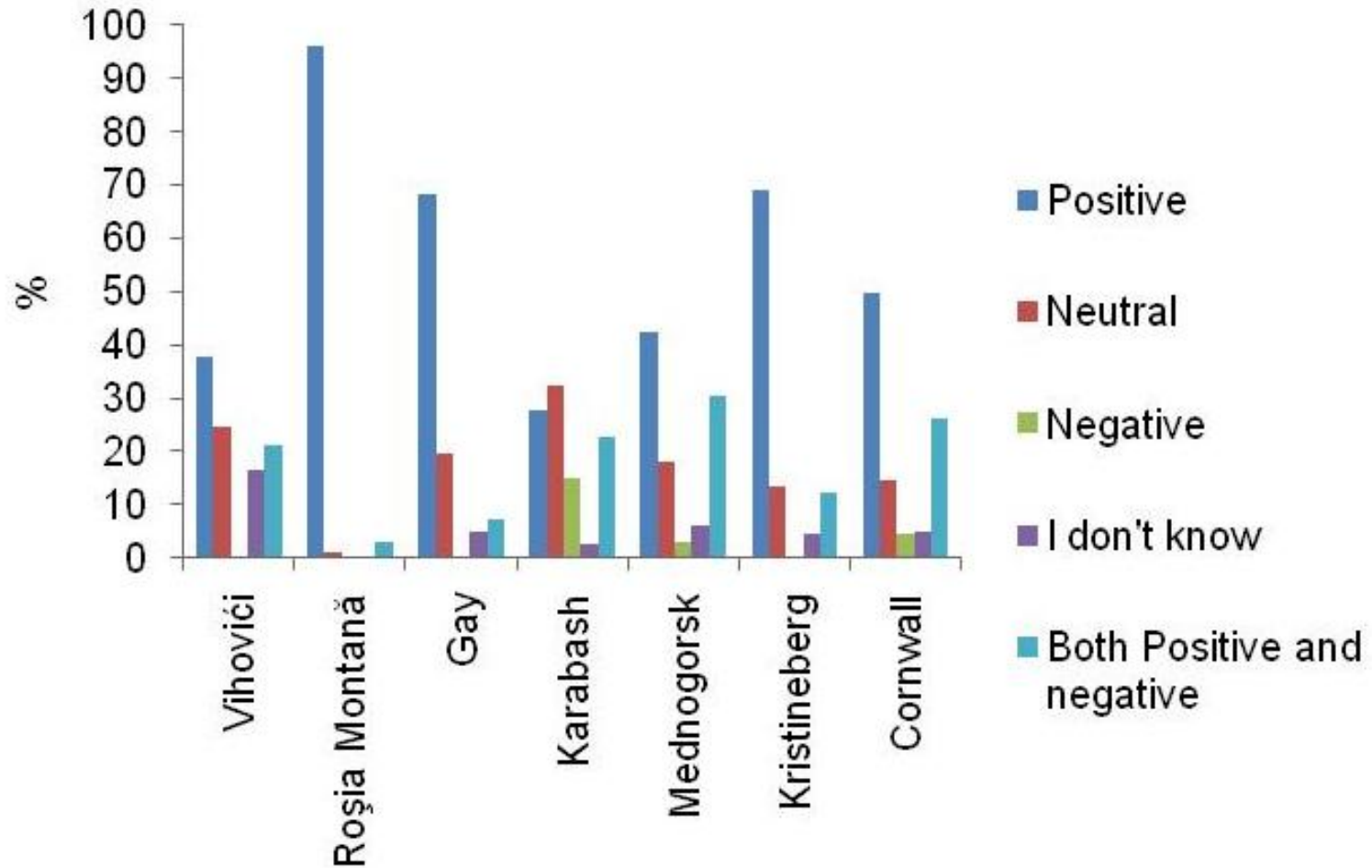
“Clarifying the future for people who remain in X and ensuring they will not be displaced”

“They should care about people's health”

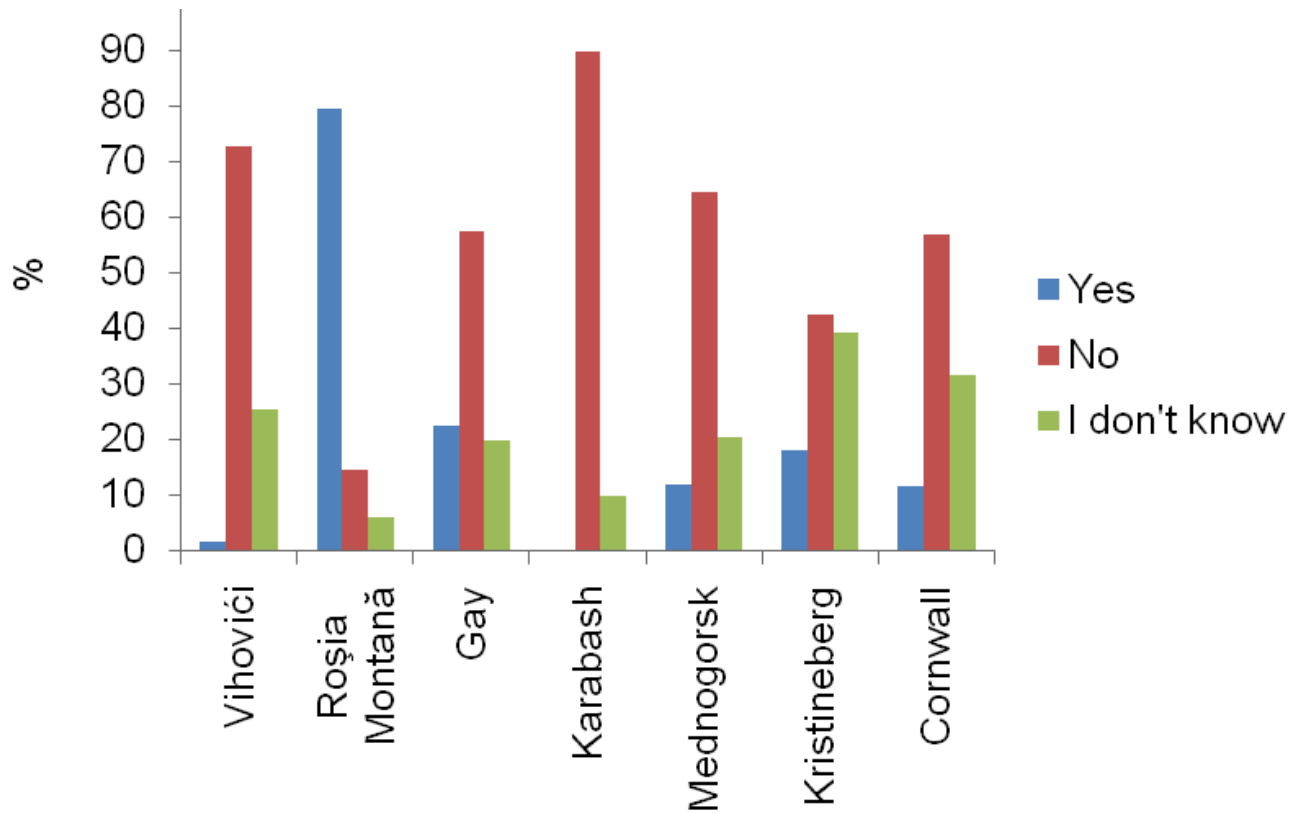
“Rehabilitation of areas surrounding mines”

“Build a hospital, increase the number of jobs”

How do people feel about mining?



Is the local community sufficiently engaged by mining companies / local government?



Consultation methods

Most useful forms of consultation

	<i>First</i>	<i>Second</i>	<i>Least preferred</i>
Vihovići	Public display	Public meeting	Postal survey
Roşia Montană	Public display	Face to face discussions	Postal survey
Gay	Public meeting	Internet survey	Public display
Karabash	Public meeting	Public display	Phone survey
Mednogorsk	Phone survey	Internet survey	Postal survey/public display
Kristineberg	Public meeting	Leaflets	Phone survey/Internet survey
Cornwall	Public meeting	Public display	Phone survey

Conclusions across sites

FULL DETAILS IN REPORTS D3.1 / D3.2 ON WWW.IMPACTMIN.EU

- Each site has different issues; divergence in opinion regarding mining projects; but expectation of personal /community benefit
- Majority of people questioned felt positive about mining in general
- Very few people think that their local mining companies are meeting their / public expectations
- Gaps exist between expectations and reality for stakeholders
- Consultation methods need to be appropriate to site
- Environmental boundaries of a project are much easier to identify than the social boundaries, which are wider and harder to define



Thank you to everyone involved in WP3

