

## OPINIONS ON MINING IN COMMUNITIES WITH A MINING HISTORY IN ROMANIA (ALBA COUNTY) - A DESCRIPTIVE ANALYSIS

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**ABSTRACT:** This article aims to capture the variety of opinions on mining and mineral exploitation in three communities with a mining history in Romania (Alba County). This study aims to compare attitudes toward mining and resource-governance preferences across Roșia Montană, the Recea neighbourhood (Alba Iulia), and Zlatna, and to examine how collective memory and mining heritage shape the perceived legitimacy and socio-economic relevance of mining and local development options. The analysis draws on data from three distinct sociological surveys conducted through questionnaire-based research: in the town of Zlatna (N = 126 respondents, data collected in 2024), among a group of 45 persons relocated to an urban area – the Recea neighborhood in the municipality of Alba Iulia (data collected in 2020), and in the commune of Roșia Montană (N = 282 respondents, data collected in 2020). Methodologically, the study adopts a descriptive and comparative approach, examining the distribution of opinions regarding the economic, social, and environmental impact of mining activities, as well as respondents' relationship to industrial heritage and local development prospects. The results highlight a marked diversity of stances toward mining, both between the three localities and within each community. The article foregrounds the ways in which place-based memory, economic dependency on industry, and the perception of risk shape nuanced attitudes that range from support to ambivalence and rejection of the resumption or expansion of mining activities.

**Keywords:** mining; mineral exploitation; communities with a mining history.

### 1.Theoretical foundation and context of the study

The post-socialist transformation of Romania's mining regions illustrates the sociological dynamics of mono-industrial dependency and its aftermath. Communities historically reliant on mining exhibit structural vulnerabilities when extraction ceases, producing unemployment, demographic decline, and environmental legacies that shape attitudes toward industrial revival (Botezan et al., 2020; Radu, 2018). These patterns resonate with theories of deindustrialization and path dependency, where economic lock-in constrains adaptive capacity and fosters ambivalence toward projects promising jobs yet perpetuating extractive trajectories (Toader Rîșteiu et al., 2022). Historical analyses underscore that mining in Romania spans from Roman antiquity through socialist industrialization, leaving infrastructural and symbolic imprints that inform contemporary interpretations of development options (Borcoș & Udubașa, 2012; UNESCO/ICOMOS, 2018/2019). In Zlatna, for example, decades of smelting have generated persistent heavy-metal contamination,

reinforcing perceptions of ecological risk and skepticism toward renewed operations (Pope et al., 2005; Damian et al., 2019).

Risk society theory provides a useful lens for understanding how hazards are socially constructed and negotiated. Empirical studies in the Apuseni Mountains reveal that residents' perceptions of water and soil contamination often align with measured pollutants, yet these judgments are mediated by trust in institutions and procedural fairness (Dogaru et al., 2009; Zobrist et al., 2009).

This dynamic reflects the concept of the social license to operate, whereby community acceptance depends not only on technical compliance but also on legitimacy and transparency (MIREU, 2020; Mihai et al., 2015). Complementarily, social representation theory explains how competing narratives-mining as economic salvation versus cultural sacrilege-structure public discourse and polarize opinion (Pop, 2014; Deaconu & Filip, 2021).

Place-based memory and industrial heritage further shape community identity and development imaginaries. In Roșia Montană, heritage recognition through UNESCO inscription

reframes local assets and strengthens non-extractive alternatives, altering the perceived trade-offs associated with mining (UNESCO/ICOMOS, 2018/2019; Jarosz, 2014). The contemporary cultural heritage of Roșia Montană and Zlatna is closely intertwined with their mining history, and as early as the eighteenth and nineteenth centuries scholarly works documented the cultural assets and monuments of these areas (Ludușan et al., 2016). Industrial landscapes thus function as symbolic resources, anchoring collective memory while influencing attitudes toward future projects (Radu, 2018). These cultural dimensions intersect with economic pragmatism, producing heterogeneous positions within and across communities.

The protest cycles surrounding Roșia Montană exemplify how local conflicts scale into national and transnational arenas. Digital mobilization and networked activism transformed a technical debate on cyanide mining into a broader contestation of governance, heritage, and environmental justice (Pascaru, 2013; Ivinson, 2015; Szabo et al., 2022). Such movements leave institutional residues-NGOs, advocacy repertoires—that continue to shape opinion formation and constrain policy options (Mining Watch Romania, n.d.; Pavelea et al., 2013).

Environmental legacies operate not only as abstract risks but as lived experience. Research in Zlatna and other sites documents severe soil and water degradation, reinforcing vernacular knowledge of chronic contamination and amplifying demands for remediation (Ispas et al., 2018; Keri et al., 2010; Borda et al., 2023). Where empirical indicators corroborate local observations, skepticism toward cyanide-based technologies intensifies; where uncertainty persists, attitudes become contingent on institutional trust (Stefanescu et al., 2021).

Following the closure of mining operations, mining communities experienced heightened risks of unemployment and population decline, as displaced workers were compelled to migrate to areas offering alternative employment opportunities (Bara & Ludușan, 2012; Mucea, 2022). Even more, finally relocation from Roșia Montană to Recea foregrounds the social consequences of displacement. Studies reveal how households negotiate identity continuity through material culture transfer and spatial adaptation, while grappling with economic insecurity and disrupted social ties (oc, 2012; World Bank,

2013; Mucea, 2022). These biographical disruptions inform subsequent evaluations of mining projects, often producing ambivalence rooted in past experiences of compensation and loss.

Synthesizing these strands suggests that opinions on mining in Zlatna, Recea, and Roșia Montană are structured by legacy effects, identity and heritage, institutional trust, and displacement biographies. Comparative evidence anticipates pronounced heterogeneity: environmental risk salience in Zlatna, heritage-based resistance in Roșia Montană, and biographically inflected ambivalence in Recea (Dogaru et al., 2009; Stefanescu et al., 2021). Across sites, trust and perceived fairness emerge as decisive factors, underscoring that attitudes toward mining are embedded in broader socio-cultural and historical contexts rather than reducible to economic calculus alone (Deaconu & Filip, 2021; MIREU, 2020).

## 2. Study objectives

Within this study, the first objective was to identify and compare attitudes toward mining and toward natural-resource governance models across three communities characterised by distinct experiences with extractive activities: Roșia Montană, the Recea neighbourhood in Alba Iulia (largely composed of relocated residents), and the town of Zlatna. To this end, the analysis examined response distributions for survey items addressing the perceived appropriateness of mineral exploitation in Romania, general evaluations of mining activities, assessments of mining's benefits for the localities where it takes place, and preferences for state-led exploitation of mineral deposits as an indicator of support for public control and state management.

The second objective was to examine the role of collective memory and mining heritage in shaping contemporary evaluations of mining and local development options. From this perspective, the research investigated the extent to which narratives of past prosperity (prior to mine closure or before the 1990s) and perceptions of the present-day impact of mining heritage are associated with positions on the social legitimacy of mining, expectations regarding its socio-economic benefits, and potential tensions between renewed extractive activity and alternative pathways of economic restructuring.

### 3. Research methodology

The study adopts a quantitative, exploratory design and relies on questionnaire-based sociological surveys conducted across three field sites and time points. Specifically, data were collected in the commune of Roşia Montană (2020), among relocated former residents in the Recea neighbourhood of Alba Iulia (September 2020), and in the town of Zlatna and its administratively affiliated localities (March–May 2024). While selected findings from these surveys have been reported elsewhere, the present article integrates additional items and comparable indicators to examine perceptions of mining activity across these contexts.

Data collection in Roşia Montană was carried out in the first part of 2020 through direct questionnaire administration. Due to the COVID-19 state of emergency, fieldwork was temporarily interrupted, and a portion of the questionnaires was completed by telephone during this period. Sampling followed a non-probability purposive approach consistent with case-study research. The sample structure considered the distribution of the resident population across the villages composing the commune, aiming to include at least 10% of adult residents ( $\geq 18$  years) from each village. Baseline figures regarding total population, households, and dwellings were obtained from local administrative records provided by the town hall. The Roşia Montană survey comprised  $N = 282$  respondents.

In Recea (Alba Iulia), quantitative data were collected in September 2020 using the same survey method, targeting individuals relocated from Roşia Montană to an urban setting. This subsample ( $N = 45$ ) was included to capture perspectives shaped by the experience of property sale and relocation, thereby providing complementary insight into attitudes toward mining and its local consequences.

In Zlatna, the questionnaire was administered face-to-face between March and May 2024, using purposive non-probability sampling. Eligibility criteria targeted adults who had resided within the administrative-territorial unit of Zlatna for at least one year. A total of 126 questionnaires were collected.

Given the exploratory objectives and the non-probability sampling strategy, the findings are not intended for strict statistical generalisation to the entire population from these areas; rather, they

are used to identify salient attitudinal patterns and to support cautious cross-site comparison. In this sense, the study approaches triangulation as a cross-context validation of recurring themes, while acknowledging that the three surveys address distinct populations.

### 4. Research results

The distribution of valid percentages for the item "*What is your opinion about mining activities in general?*" in the Zlatna survey indicates a predominantly positive assessment of mining, with a substantial concentration of responses in the favourable categories. Overall, the expressed views suggest that mining activities are perceived as legitimate and useful rather than problematic or undesirable, at least at a general and abstract level, independent of a specific local case.

Nearly half of respondents (47.6%) report a "*good*" opinion of mining activities, while 23.0% select "*very good*". Combined, these categories account for 70.6% of valid responses, reflecting a high level of acceptance and an overall favourable orientation toward mining. Such a distribution may be linked to social representations centred on mining's economic role (employment, income generation, infrastructure, and contributions to development), as well as a positive stance toward the utilisation of natural resources.

At the same time, 23.0% of respondents adopt a neutral position ("*neither good nor bad*"), indicating either ambivalence or a conditional evaluation dependent on factors such as the technologies employed, environmental impacts, or the degree of regulatory oversight. The explicitly negative segment is minimal: 1.6% rate mining activities as "*bad*" and 1.6% as "*very bad*", amounting to 3.2% of valid responses. In addition, 3.2% state that they are unfamiliar with the topic, suggesting a low but non-negligible level of limited knowledge or social distance from the issue.

Taken together, the response pattern points to a predominantly pro-mining attitudinal climate in which negative judgments are marginal, while neutrality remains salient as a potential indicator of conditional acceptance. This combination of strong support alongside a relatively sizeable neutral segment may indicate that, although mining is evaluated positively in general terms, its social legitimacy is likely contingent on concrete

operational practices, institutional safeguards, and the ways in which social and environmental costs are managed..

#### 4.1. Attitudes towards the role of the Romanian state in the management of natural resources

The distribution of valid percentages obtained in the Zlatna survey indicates a predominantly favourable orientation toward the idea that Romania should exploit its mineral resources. For the question, “*To what extent do you consider it appropriate for Romania to exploit its mineral ores?*” responses cluster in the upper end of the scale, suggesting that mineral exploitation is perceived within the investigated sample as an appropriate and generally legitimate option. Specifically, 45.2% of respondents consider it appropriate “to a very large extent,” while 31.0% select “to a large extent.” Combined, these two categories account for 76.2% of valid responses, indicating a high level of support. This predominance of strong endorsement may be interpreted as reflecting the valorisation of domestic resource use, linked to expectations regarding economic benefits, development, or strengthened national control over resources.

At the same time, 15.9% of respondents indicate “to a moderate extent,” signalling a more qualified position that may be contingent on factors such as institutional capacity, environmental risks, or the distribution of benefits. The critical segment is small: 5.6% rate appropriateness “to a small extent” and 2.4% “to a very small extent,” totalling 8.0% of valid responses. Overall, the response structure points to a robust consensus in favour of mineral exploitation, accompanied by limited opposition and a relatively narrow share of cautious or conditional positions.

Given the specific context in which the original study was conducted, respondents from both Roşia Montană and the Recea neighbourhood of Alba Iulia were asked about the role of the Romanian state in the governance of natural resources and the extraction of mineral deposits. The item “It is better for the exploitation of the deposit to be carried out by the Romanian state” was designed to capture respondents’ orientations toward resource-governance models—namely, their preference for state-led extraction in relation to other possible arrangements (private or

mixed). In this respect, the item functions as an indicator of attitudes toward public control over natural resources and of expectations concerning the public interest, benefit distribution, and the institutional responsibility associated with extraction.

The distribution of responses indicates a predominantly favourable orientation toward state-led exploitation. The proportion of respondents reporting strong agreement is 75.6%, suggesting robust majority support for this option. An additional 12.2% report partial agreement, pointing to an overall positive stance that may nevertheless be accompanied by reservations regarding institutional capacity, implementation modalities, or the concrete conditions under which exploitation would occur. The neutral category (neither agree nor disagree) totals 6.5%, which may reflect indecision, insufficient information, or reluctance to take an explicit position.

On the opposition side, 3.9% of respondents report strong disagreement and 1.8% partial disagreement, delineating a small critical minority with respect to the idea of state-managed exploitation. Overall, the aggregation of agreement responses (strong + partial) yields a support level of 87.8%, indicating a high degree of endorsement for state management of resources. Relative to typical distributions in survey research, the overwhelming prevalence of agreement signals a pronounced social preference for public control and for keeping the perceived benefits of extraction within the sphere of national and community interest. This is particularly salient given that the research was conducted after Roşia Montană Gold Corporation (RMGC) had substantially reduced its activity and presence in the locality where it intended to extract the deposit through the Roşia Montană Project.

In the study conducted in the Recea neighbourhood, a similarly large proportion of respondents (77.8%) report strong agreement with the statement, suggesting firm support for extraction to be carried out by the Romanian state. A further 11.1% indicate partial agreement, adding to this supportive pattern, albeit with potential caveats. Only 4.4% adopt a neutral stance (neither agree nor disagree), while 6.7% express strong disagreement. No respondent selected partial disagreement. When agreement responses are combined (strong + partial), 88.9% of respondents favour state-led exploitation of the Roşia Montană resources, indicating a high level

of consensus in support of public control over mineral deposits.

This percentage distribution can be associated with the valorisation of economic sovereignty and with the expectation that the benefits of exploitation should be administered in the public interest, rather than through forms of governance perceived as less transparent or less community-oriented.

Comparatively, both Recea (Alba Iulia) and Roşia Montană display very high support for the idea that exploitation should be conducted by the Romanian state; differences are better understood as matters of nuance rather than direction. In Recea, cumulative agreement (strong + partial) reaches 88.9% (with 77.8% strong agreement), while in Roşia Montană it is similarly high at 87.8% (with 75.6% strong agreement), indicating comparable levels of consensus in favour of state-led exploitation. Nonetheless, Recea shows a more concentrated form of opposition, given the relatively higher share of strong disagreement (6.7% versus 3.9%), whereas Roşia Montană exhibits a more “graded” rejection (including partial disagreement at 1.8%) and slightly higher neutrality (6.5% versus 4.4%). Overall, both communities articulate a consistent preference for state-led exploitation; however, Recea appears more polarised (higher strong agreement alongside higher strong disagreement), while Roşia Montană reflects a somewhat more differentiated distribution across intermediate and neutral positions. One plausible explanation for these percentage differences is the unequal number of questionnaires administered in the two communities.

#### 4.2. Perceived benefits and prosperity narratives

In the Zlatna study, responses to the statement “*Mining activity is beneficial for the localities where it is carried out*” indicate a predominantly favourable orientation, although support is often expressed in a moderate register. The dominant category is strong agreement (52.0%), suggesting that more than half of respondents who provided an answer firmly believe that mining generates benefits for local communities. In addition, partial agreement accounts for 34.1%, indicating further support that may reflect acceptance of the idea of benefits while remaining conditional on factors such as regulatory arrangements, environmental

impacts, the distribution of advantages, or concrete local experiences. Taken together, agreement responses (strong + partial) reach 86.1%, outlining a broad consensus in favour of perceiving mining as a beneficial activity.

By contrast, opposition remains limited: 8.9% express partial disagreement and 4.9% strong disagreement, amounting to 13.8% cumulatively. The presence of this critical segment suggests that, despite the overall positive evaluation, some respondents problematise the benefits of mining, likely in relation to social and ecological costs or distrust in the actors involved. Overall, the response profile points to high local social legitimacy for mining activities, alongside a minority that contests or qualifies this assessment

Perceptions of community prosperity prior to the closure of the state mine in Roşia Montană are overwhelmingly positive among residents of the Recea neighbourhood (Alba Iulia), a community composed largely of individuals displaced from the former mining settlement. Analysis of responses to the item “Before the closure of the state mine in Roşia Montană, the community was prosperous” reveals an almost unanimous consensus: 86.7% of respondents agree (37.8% partially agree and 48.9% strongly agree), while only 2.2% express strong disagreement and 11.1% adopt a neutral position. This response structure points to a strongly favourable collective memory of the pre-closure period, with an agreement index of 77.8 on a 0–100 scale and a weighted mean of 3.33 on the 1–4 Likert scale, confirming the intensity of this positive perception.

From a sociological standpoint, these data suggest that the experience of displacement and the loss of employment have reinforced a narrative of past prosperity. In the literature on mono-industrial communities, such patterns are common in post-industrial contexts, where economic decline and social fragmentation tend to amplify nostalgia for a perceived “golden age” associated with economic stability and identity security. In this case, the strong net difference in favour of agreement indicates not only a dominant perception but also a degree of cohesion around the idea that community prosperity was closely tied to the mine’s operation.

Findings from Roşia Montană itself confirm and further intensify the perception of community prosperity prior to the mine closure, pointing to an even stronger consensus than that observed among displaced residents in Recea. In response to the

same item, 90.3% of respondents agree (23.3% partially agree and 67.0% strongly agree), while disagreement remains marginal (1.4% strongly disagree and 2.2% partially disagree), and neutrality accounts for only 6.1%. This distribution highlights an extremely favourable collective memory of the pre-closure period, with a clear predominance of strong agreement, suggesting an almost unanimous perception of prosperity.

Compared with the Recea data-where strong agreement reaches 48.9%-the share of strong agreement in Roşia Montană rises to 67.0%, indicating greater intensity of nostalgia and attachment to the mining past within the origin community. This difference may be explained by proximity to direct experience: residents who remained in Roşia Montană experienced the economic and social consequences of the mine's closure immediately, whereas displaced individuals underwent processes of adaptation to a new urban context, which may moderate perceptions of prior prosperity. Nevertheless, in both settings, the consensus is overwhelming, confirming that the mine's closure has generated a shared narrative centred on the loss of an era of economic and identity stability. These values not only corroborate the overall positive appraisal but also suggest a stronger intensity of collective memory within the origin community - an implication that is relevant for analysing local conflicts, development strategies, and resistance to change. In the context of debates over resuming extraction or pursuing economic reconversion, the findings indicate that public policy must take account of community nostalgia and the symbolic capital attached to the mining past in order to avoid exacerbating social tensions.

#### 4.3. Perceptions of the community impact of mining

The distribution of valid percentages indicates a dominant perception of the continued effects of mining on the Zlatna community. A clear majority of respondents (71.4%) consider the city's mining heritage to have a significant present-day impact, suggesting that the industrial past remains a salient reference point for current local dynamics. At the same time, 14.3% believe that mining heritage no longer exerts a significant impact, while an additional 14.3% report "I don't know," signalling either a sense of detachment from the

mining past or uncertainty in evaluating effects perceived as indirect or unevenly distributed.

The valid-percentage distribution for the item "*What is your opinion about the historical role of mining in the development of the city of Zlatna?*" points to a predominantly positive assessment of mining's contribution to the local development trajectory. The response pattern suggests that, within respondents' social imaginaries, mining is primarily associated with formative processes for the city, and its historical role is interpreted more as a driver of growth and community consolidation than as a problematic dimension. In distributional terms, 39.7% rate mining's historical role as "good" and 36.5% as "very good". Together, these two categories account for 76.2% of valid responses, indicating broad consensus in favour of a positive interpretation of Zlatna's mining legacy. The predominance of favourable evaluations may reflect the internalisation of a local narrative in which mining functions as an economic and social infrastructure, shaping employment, urbanisation, and community identity.

At the same time, 19.8% of respondents adopt a neutral position, which may indicate ambivalence (simultaneous recognition of benefits and costs) or reluctance to endorse categorical normative judgments, particularly in the context of contemporary debates about the socio-ecological impacts of extractive industries. The negative segment is relatively small: 4.0% evaluate mining's historical role as "poor" pointing to a minority that either contests its developmental contribution or interprets it primarily through adverse effects (environmental degradation, economic vulnerability, or structural dependence).

By way of comparison, responses to the item "*Before the 1990s, everything was going well in Roşia Montană*" also reveal a predominantly positive perception among local residents. In the community study, based on 280 valid responses, 60.7% express strong agreement and 21.4% partial agreement, while 13.9% take a neutral position. At the opposite pole, 3.9% report disagreement (2.9% strong disagreement and 1.1% partial disagreement). These figures suggest that collective memory of the pre-1990 period is strongly positive, though slightly more tempered than perceptions of prosperity immediately prior to the mine's closure. This pattern points to a tighter association between the idea that "things

were going well" and the more recent functioning of mining activity.

## 5. Conclusions, limitations of the article and future research directions

The study conducted in Roşia Montană and the Recea neighbourhood reveals broadly similar respondent views regarding the statement, "*It is better for the exploitation of the deposit to be carried out by the Romanian state,*" which captures preferences over resource-governance arrangements and serves as an indicator of support for public control and state-led management of extraction. In the Roşia Montană context-where extraction has been intensely contested-the item reflects not only predominantly firm positions, but also shades of conditional acceptance and, to a lesser extent, partial rejection of an expanded state role. Overall, the findings point to a clearly favourable orientation toward state involvement in resource exploitation among both Roşia Montană residents and displaced respondents living in Recea.

This perception has direct implications for social cohesion and contemporary community conflict. On the one hand, consensus around past prosperity may foster solidarity and civic mobilisation; on the other, it may generate tensions over local development strategies, particularly between proponents of renewed extraction and advocates of alternative economic pathways (e.g., tourism, heritage conservation). The response distributions and composite indicators (e.g., agreement indices, weighted means) provide a clear picture of collective memory among displaced residents from Roşia Montană, underscoring the relevance of these dynamics for analysing social risks, community conflict, and post-industrial processes of identity reconstruction.

In parallel, the results support the view that mining functions, at the level of collective representations, as a central reference point in defining Zlatna's historical development, with a high degree of symbolic validation. At the same time, the notable share of neutral responses suggests that, although mining heritage is generally valued, its assessment remains open to reinterpretation depending on personal and generational experiences, as well as the contemporary context of economic restructuring.

The principal limitation of this research lies in the fact that the synthesised findings draw on three separate studies conducted in different contexts and using different instruments; consequently, direct comparability is constrained by variation in the survey items (with the exception of the two 2020 investigations, which included two identical items). Nevertheless, all three studies contain convergent questions that make it possible to outline broader tendencies in how residents of communities with a mining past evaluate mining and its socio-economic relevance.

A second major limitation concerns the investigated samples and the geographical scope of the research. The samples were not designed to ensure statistical representativeness at either the regional or national level, and any generalisations must therefore be advanced cautiously. Even though the survey in Roşia Montană covered approximately 10% of the population of the villages belonging to the commune, the findings remain embedded in the commune's local specificity, as is also the case for the two other communities analysed (Zlatna and the Recea neighbourhood). Accordingly, including additional mining localities-both within Alba County and in other regions of Romania-would provide a broader comparative basis and reduce the risk of over-interpreting local particularities.

With regard to future research, a priority direction would be to extend survey coverage to the full set of Romanian localities with a mining history, differentiating between types of extraction and deposit characteristics, as well as between the size and workforce structure of former state-owned enterprises. Such an expansion would enable more systematic comparative analyses across communities, taking into account the specific features of mining activity (e.g., type of resource extracted, operational intensity, organisational arrangements) and trajectories of restructuring or post-mining decline-variables that can substantially shape social perceptions of mining, in conjunction with other socio-demographic criteria.

Another relevant direction involves cross-national comparative research to examine how populations in mining-heritage communities in other European or global contexts relate to mining and its socio-economic legacy. Complementarily, it would be useful to compare localities where mining remains active with those where the sector has been closed, in order to

identify attitudinal differences associated with direct experience of ongoing extraction versus post-industrial experience. Finally, comparative analyses between mining and non-mining localities with similar socio-demographic or

economic profiles could clarify the extent to which orientations toward mining are specific to extractive experience or, more broadly, reflect structural conditions shared with other types of communities.

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