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PARTICIPATORY PLANNING IN MINING AREAS – THE RESEARCH OUTLINE OF THE MINIPART PROJECT

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ABSTRACT

This paper presents the research outline of the MINIPART project – Improving Participation in Spatial Planning of Mining Areas. The project is developed and supported under the PRISMA program by the Science Fund of the Republic of Serbia, grant #7598. It addresses issues arising from large-scale mineral extraction, which often leads to substantial changes in local communities and the environment, predominantly negative ones (e.g. monofunctional economy; environmental degradation; health issues; and resettlement). Opposition from communities and experts against mining in Serbia has intensified since the 2000s, underscoring the significance of meaningful public participation in urban and regional planning of mining areas.

MINIPART is designed as an exploratory study that employs both qualitative and quantitative research methods. Its objective is to identify the most suitable participation methods, tested and tailored to stakeholders in mining areas, including vulnerable groups. A database of participatory methods will be developed through a literature review, insights gained from a study visit to a mining area abroad, and discussions with external collaborators. Best-tailored methods will be selected through a survey in the case study mining area – the City of Bor and Majdanpek Municipality – as well as interviews with stakeholders and testing with focus groups. The novelty of this project lies in the active involvement of diverse stakeholders in the development of the most appropriate participatory methods.

Keywords: *participation; mining areas; spatial planning; scientific project; Serbia*

1. INTRODUCTION

The aim of this paper is to present the MINIPART scientific national project, starting from explaining the initial scientific-financial surrounding that enabled it at the first place, i.e. the Science Fund of the Republic of Serbia and the specific PRISMA program. Further, this research aims to reveal the research outline of the MINIPART project, through introduction of the theoretical analysis of participatory planning experiences in mining regions in Serbia and worldwide. Applied methodology and planned dissemination of results will be discussed, as well as some of the already accomplished results.

The Science Fund of the Republic of Serbia is a public organization established in March 2019 with the primary aim of providing continuous support for scientific and research activities. Funding for its programs is secured through the budget of the Republic of Serbia, as well as international support - primarily from the European Union and the World Bank. Projects within the Fund's programs are financed through public calls for proposals.

The public call for the PRISMA program was launched in June 2022. This program is intended for scientists and researchers employed in accredited research organizations in the Republic of Serbia. It supports basic and applied research projects in all scientific fields without predetermined topics (Science Fund of the Republic of Serbia, 2025). The program allows researchers to define their own research agendas, form their own teams, and collaborate with relevant laboratories, research centers, and businesses in Serbia and worldwide. One of its key objectives is to engage young researchers in scientific work and strengthen the professional capacities of researcher team members. The total budget for the program is 25,000,000 euros. A total of 656 project proposals were submitted. The Program Evaluation Committee, composed of international experts, conducted a two-stage evaluation process. According to the final ranking list published in October 2023, 97 projects were approved for funding. Within the Social Sciences and Humanities sub-programme, only 11 projects were selected. The MINIPART project – Improving Participation in Spatial Planning of Mining Areas – was ranked 4th in this category and approved under grant #7598. It will run for 36 months (till January 2027) with a total budget of 196,463.33 EUR.

Researchers from the Institute of Architecture and Urban & Spatial Planning of Serbia (IAUS) formed a small multidisciplinary team in collaboration with the Technical Faculty in Bor (TFBor), the Faculty of Geography (UBGEF) and the Institute for Philosophy and Social Theory (IFDT), all affiliated with the University of Belgrade. This team brings together sociologists, technological and physical chemist, metallurgical and mining engineer, environmental and political scientist, and urban and regional planers with expertise in participatory planning and development of mining regions. In line with the requirements of the PRISMA call, a young researcher – a PhD student from IFDT – is involved in the project. The team's collaboration is further strengthened by the involvement of a diaspora expert in participatory planning from University College Dublin, Ireland, and an international expert in mining community development from the University of Eastern Finland.

2. THEORETICAL BACKGROUND

Large scale resource extraction induces diverse and significant negative impacts on local community and environment, rising issues of both social and environmental justice (Chauhan, 2018; Manojlovic and Kabanga, 2023). Therefore, mining companies that neglect to implement corporate social responsibility (Jenkins and Yakovleva, 2006) and fail to collaborate effectively with local communities risk losing public approval, often referred to as the "social licence to operate" (Conde, 2017; Heffron et al., 2021). This lack of local community approval frequently leads to considerable challenges that are hard to handle - such as worker strikes and public protests, which disrupt production and decrease profitability, and also have negative impact on stock prices (Tsotetsi, 2022). A major factor driving opposition to mining activities is the absence of trust within the local community (Lesser, 2021). In recent decades, conflicts among local communities, mining companies, and governments have been on the rise globally, including in the EU and Serbia (Mononen et al., 2022; Stepanovic, 2022). Negative events at the local level can shape public perceptions of mining on a regional or even transnational scale, as illustrated by the controversy surrounding the Rio Tinto Jadar mine project in Serbia (Ivanović et al., 2023; Proctor, 2022).

In Serbia, government and mining companies often deliberately overlook citizens' perspectives and social values related to proposed mining projects (Maričić, 2014; Ivanović et al., 2023). Whether public participation is genuinely meaningful or merely manipulative largely depends on several factors: the attitudes of investors and experts, the timing of public involvement in decision-making, the types of participation methods employed, and whether decisions are made independently of public disapproval and social consequences. Without a comprehensive methodology for public involvement, polarization between opposing groups tends to be driven by political agendas and power dynamics rather than by accurate and transparent information (Taylor et al., 2004).

The Planning and Construction Act (2009) of the Republic of Serbia mandates public consultation and participation, including early public insight since 2014 (Nikolić, et al., 2021), in urban and regional planning processes. However, in practice, only the minimal, legally required level of participation is typically implemented, while decision-making often remains opaque and subject to manipulation (Maričić et al., 2018; Slavković et al., 2021). Balancing individual and collective interests presents a significant challenge for urban and spatial planners as well as decision-makers. In this context, understanding the social values and attitudes of affected communities through genuine civic participation is crucial for achieving fair and sustainable planning outcomes.

Beyond formal participatory methods defined in legislation, developed societies actively develop and use informal methods. Informal participation methods play a crucial role in broadening stakeholder engagement, particularly in the context of mining projects where trust in formal institutions is often low (Pantić, et al., 2021). The integration of digital technologies into participatory processes significantly enhances their reach and effectiveness by enabling wider and more flexible involvement. Virtual participation tools allow stakeholders to engage in discussions and decision-making regardless of geographical or time constraints, reducing logistical burdens and financial costs for both organizers and participants (Pantić & Čolić, 2023). Moreover, digital platforms facilitate real-time interaction, data collection, and transparent communication, fostering inclusivity and responsiveness. To fully harness the advantages of informal participation, it is essential to embrace digitalization and develop user-friendly, accessible technologies that empower diverse stakeholders to actively shape mining-related decisions (Imottesjo, 2018; Dubov & Shoptaw, 2020; Rajhans, 2020).

3. RESEARCH OUTLINE OF THE MINIPART PROJECT

Development in large-scale mineral extraction areas leads to significant changes in both local communities and the environment. While it can bring economic progress, mining and related activities also generate negative impacts, such as a monofunctional economy, environmental degradation, health issues, involuntary resettlement and more (Maričić, 2014). In Serbia, the accumulation of these problems and the absence of effective solutions have led to increasing dissatisfaction and protests among local communities and experts, particularly since the 2000s. A key contributing factor to this discontent is the lack of meaningful public participation in the planning processes of mining areas.

The primary goal of MINIPART is to identify the most effective participatory methods tailored to all stakeholders in mining areas. These methods will empower stakeholders to meaningfully influence decision-making processes, ultimately improving their quality of life and work—socially, environmentally, and economically—while promoting sustainable development. The project defines a few specific objectives, too:

- Develop a comprehensive repository of participatory planning examples in mining areas.
- Actively engage all stakeholders—including citizens, the mining industry, government agencies, NGOs, and environmental groups—through interviews, surveys, and focus groups to identify the most effective participation methods.
- Address the needs of vulnerable groups such as women, ethnic minorities, rural populations, persons with disabilities, the elderly, and youth to ensure inclusive participation strategies.
- Design and refine participatory approaches that foster meaningful and inclusive community engagement in mining-related planning and development.
- Disseminate findings widely to project participants, national and local government bodies, NGOs, citizens in Serbia and beyond, academia, professionals, and the general public.

The MINIPART project is an exploratory study that uses a combination of qualitative and quantitative research methods. Its goal is to identify the most effective participation methods tailored to stakeholders in mining areas, including vulnerable groups. A database of participatory methods will be created through a literature review, insights from a study visit to a mining region in Ireland and discussions with external collaborators. The most suitable methods will be selected based on a survey conducted in the Bor and Majdanpek mining areas, followed by interviews with stakeholders and testing with focus groups. SPSS software will be used to analyse the primary data collected through the survey, while a grounded theory approach will be applied to the audio data from interviews and focus groups.

Disseminating the project's findings through multiple channels—including the project website (available in both Serbian and English), high-impact scientific journals, international conferences, and a comprehensive Layman's report—will play a crucial role in raising awareness and fostering engagement among a wide range of audiences. By making the research outcomes accessible to academia, professionals, decision-makers, and the general public, the project aims to inspire and motivate these groups to actively participate in meaningful public involvement processes. This inclusive approach will not only enhance knowledge exchange but also promote informed decision-making and collaborative planning, ultimately contributing to more transparent and democratic governance in mining regions and beyond.

3.1. Methodology applied in the MINIPART project

The MINIPART project assumes that participatory methods can be identified and developed only through collaboration with end users, including citizens, the business sector, and governmental and non-governmental

organizations. Therefore, MINIPART is structured as an exploratory study integrating both qualitative and quantitative research methods. Since participation is particularly relevant in regions undergoing major spatial changes, such as mining areas, the fieldwork focuses on one of Serbia's most prominent mining regions—the Bor and Majdanpek mining area. This region faces significant social and environmental challenges, including environmental pollution, resettlement, inadequate expropriation compensation, and the neglect of workers' rights. These issues have led to conflicts and increased civic activism against the mining company, manifesting in protests and road blockades, especially since 2019 (Balkan Green Energy News, 2019; N1 Belgrade, 2020; Bor030, 2021; Radio Slobodna Evropa, 2022).

The search for the most suitable participatory methods follows a funnel approach, with each phase narrowing down to the final selection of methods. The first phase involves selecting participatory methods through desktop analysis, which includes reviewing literature, projects, reports, and other documents. Discussions with external collaborators and a study visit to the Tara mine in Ireland provide additional insights and perspectives from the mining industry.

The second phase focuses on assessing the knowledge and attitudes of urban and rural communities in the Bor-Majdanpek mining area. A representative sample of 300 respondents from a total population of 60,000 is surveyed to identify the most relevant aspects of participation that motivate or enable their involvement in the planning process. The results help narrow down the initial pool of participatory methods. SPSS software is used to analyze the survey data.

The feasibility of implementing new participatory models in planning is to be evaluated through in-depth interviews with key stakeholders who influence the selection of participation methods in decision-making. These stakeholders include representatives from ministries responsible for spatial planning, mining, and environmental protection, local governments of Bor and Majdanpek, public institutions involved in urban and spatial planning, national spatial planning bodies, national and local NGOs, and public enterprises managing nature protection near mining sites. Coding the interview transcripts using a grounded theory approach helps identify criteria that decision-makers consider when selecting effective participatory methods, the potential for introducing new methods, and the factors influencing their adoption.

The final phase of narrowing down participatory methods is based on focus group discussions. A workshop is to be organized in the case study area (City of Bor), bringing together representatives from governmental, non-governmental, business/industry, and civil sectors. In addition, focus groups are structured to represent vulnerable groups identified as disadvantaged in participation studies: youth, the elderly, rural populations, people with disabilities, ethnic minorities, and women. Participants discuss the most suitable participatory methods within and between their groups. Around 30 participants are expected, with some taking part in multiple focus groups.

The focus group workshop provides an opportunity to test selected participatory methods. Participants engage with a variety of methods, ranging from traditional approaches like submitting written complaints to less conventional methods like online surveys (Braun et al., 2020) and innovative solutions using E-applications (Philpot et al., 2019). An E-participation application is to be developed within the project to facilitate this process. Based on the data collected from the workshop, the project team makes the final selection of the most suitable participatory methods for mining areas. The results are to be published in a Layman's report to inform the general public.

3.2. Dissemination of results

In addition to achieving high-quality results, it is essential to effectively promote the project and its results to academia, professionals, citizens and government stakeholders. This is also expected to enhance the visibility and positioning of team members within the academic community. Therefore, well-planned dissemination activities are crucial. To maximise the visibility of the MINIPART project, the team has planned several dissemination strategies, including the creation of a bilingual website (Serbian and English) at www.minipart.rs. The website serves as a central platform for sharing project results. Other dissemination activities include presenting project results at national and international conferences, publishing research findings in high-impact international scientific journals, and releasing an international monograph and a Layman's report with practical recommendations for a broader audience. All the project achievements are publicly accessible on the project website, which will remain active for at least three years after the project concludes. Shared results include a database of participatory methods, research on participatory methods, an infographic database, an e-participation application and Layman's report. Publishing exclusively in open-access,

high-impact journals will increase the visibility and citation of the project results. The international monograph will be published in English and involve not only team members but also researchers from other SROs and abroad. The international monograph, published in English, will feature contributions not only from team members but also from researchers from other Serbian Research Organizations (SROs) and international collaborators. This collaborative approach will enhance the project's visibility within global academic communities. In addition, scientific publications will be accessible through the RAUMPLAN repository (http://raumplan.iaus.ac.rs) – the Repository of Architecture, Urbanism, and Planning at the Institute of Architecture and Urban & Spatial Planning of Serbia (IAUS).

The dissemination strategy is tailored to maximize impact:

- Journal Publications will enhance international visibility and academic recognition for team members;
- Open Data (e.g., databases) will be made available for other researchers to utilize in their studies, fostering further research and collaboration;
- Layman's Report will serve as a practical resource for national and local governments, professional institutions in urban and spatial planning, public companies, industry stakeholders, and NGOs. It aims to improve participatory methods, enhance cooperation with citizens, and empower communities and NGOs to advocate for the implementation of effective.

(a) (b)

Figure 1: (a) Project logo, and (b) Project webpage layout

4. PRELIMINARY RESULTS

The preliminary results presented in this chapter refer to the first year of the MINIPART project, which constitutes one-third of the project's total duration. This initial phase focused on comprehensive data collection from both secondary and primary sources, laying the foundation for subsequent research activities.

During the first year, the project team conducted extensive desktop research on academic literature addressing public participation in mining areas. In addition, mining-related urban and spatial plans in Serbia were gathered and analysed, alongside a review of public participation methods outlined in European legislation. These secondary sources provided essential insights into existing frameworks and identified gaps in participatory practices within mining-affected communities.

Primary data collection efforts included a study visit to the Tara Mine (Ireland) in September 2024, enabling direct observation and engagement with stakeholders involved in participatory processes. Furthermore, a survey was conducted among the local population in the City of Bor and Majdanpek during the summer of 2024, aiming to assess public awareness, engagement levels, and perceptions of participatory governance in mining areas.

A portion of the collected data has already been made publicly available on the project's webpage, where a dedicated database showcases urban and spatial planning documents related to mining areas. The remaining data are currently being analysed for publication in peer-reviewed research articles. Upon publication, additional databases will be integrated into the project website, facilitating access to information through interactive filtering options. These databases will allow users to search for academic papers on participation in mining areas by country, methodology, and keywords, as well as to explore both legally binding and informal participatory methods employed in different European/worldwide contexts.

To date, the preliminary results of the project—encompassing survey findings and desktop analysis—have been disseminated through a collaborative presentation at University College Dublin (September 2024). Additionally, findings were shared at the International Conference on Public Policy and Public Administration (ICPPPA-25), held in January 2025, in Salvador, Brazil. The conference presentations, along with proceedings, are accessible via the project webpage and the RAUMPLAN repository.

Initial findings from the project highlight several critical observations:

- Legally binding participatory methods in Europe exhibit only minor variations across countries. However, the diversity and abundance of informal participatory approaches documented in the literature far exceed those found in official regulations;
- Public familiarity with participatory opportunities in mining areas remains insufficient. A key contributing factor is the low level of trust in institutions, compounded by inadequate dissemination of information regarding participation mechanisms.

The second year of the project, scheduled for 2026, is expected to yield significant outcomes through further dissemination at both national and international conferences and the publication of several research papers. This phase will also involve the collection of additional primary data through expert interviews and focus groups, aiming to deepen the understanding of participatory practices in mining-related spatial planning.

5. CONCLUSIONS

The MINIPART project is a research initiative funded by the Science Fund of the Republic of Serbia under the PRISMA program. Its primary objective is to identify the most effective participatory methods tailored to diverse stakeholders in mining areas, ensuring that participation is a meaningful process rather than a formality. By fostering inclusive engagement, the project aims to mitigate tensions commonly associated with large-scale mining projects.

This three-year project employs a mixed-methods approach, combining secondary data collection with primary research through surveys, expert interviews, and focus groups. The research benefits from the collaboration of four Serbian scientific institutions—the Institute of Architecture (lead partner), the Faculty of Geography, the Technical Faculty in Bor, and the Institute for Philosophy and Social Theory (University of Belgrade)—as well as external partners from University College Dublin (Ireland) and the University of Eastern Finland. Key activities have been successfully completed, including a study visit to Ireland and a survey conducted in Bor and Majdanpek.

Preliminary findings from the first year emphasize the need to enhance institutional transparency and communication to strengthen public participation in decision-making processes related to mining areas. As the project advances, these insights will continue to inform the development of more effective participatory governance frameworks, contributing to sustainable and socially responsible mining practices.

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